

# **ATTACHMENT A**

## **Regulations**

### **PROPOSED**

ADOPTION OF TITLE 13, CALIFORNIA CODE OF REGULATIONS,  
CHAPTER 9, Article 4.5,  
CALIFORNIA REGULATIONS FOR NEW 2001 AND LATER  
OFF-ROAD LARGE SPARK-IGNITION ENGINES  
(25 AND GREATER HORSEPOWER )

and

### **PROPOSED**

AMENDMENTS TO TITLE 13, CALIFORNIA CODE OF REGULATIONS,  
CHAPTER 9, ARTICLE 3  
CALIFORNIA REGULATIONS FOR NEW 1995 AND LATER OFF-HIGHWAY  
RECREATIONAL VEHICLES AND ENGINES

**PROPOSED**

ADOPTION OF TITLE 13, CALIFORNIA CODE OF REGULATIONS,  
CHAPTER 9, Article 4.5,  
CALIFORNIA REGULATIONS FOR NEW 2001 AND LATER  
OFF-ROAD LARGE SPARK-IGNITION ENGINES  
(25 AND GREATER HORSEPOWER )

Adopted:\_\_\_\_\_

NOTE: This is a new regulation proposed for adoption. All language is new and set forth in standard type.

## **Proposed Regulation Order**

NOTE: This is a new regulation proposed for adoption. All language is new and set forth in standard type.

Adopt Title 13, California Code of Regulations, Chapter 9 Off-Road Vehicles and Engines Pollution Control Devices, sections 2430 through 2439 to read as follows:

### **Chapter 9 Off-Road Vehicles and Engines Pollution Control Devices**

#### **Article 4.5. Off-Road Large Spark-Ignition Engines**

##### **2430. Applicability.**

(a) (1) This article applies to large off-road spark-ignition engines 25 horsepower and greater produced on or after January 1, 2001 and all equipment and vehicles produced on or after January 1, 2001 that use such engines.

(2) Every new off-road large spark-ignition (LSI) engine that is manufactured for sale, sold, or offered for sale in California, or that is introduced, delivered or imported into California for introduction into commerce and that is subject to any of the standards prescribed in this article and documents incorporated by reference therein, must be certified for use and sale by the manufacturer through the Air Resources Board and covered by an Executive Order, issued pursuant to Chapter 9, Article 4.5, Section 2433.

(b) Each part of this article is severable, and in the event that any part of this chapter or article is held to be invalid, the remainder of the article remains in full force and effect.

(c) This article and documents incorporated by reference herein include provisions for emissions certification, labeling requirements, warranty, in-use compliance testing, and production line testing.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150- 43154, 43205.5 and 43210-43212, Health and Safety Code.

## **2431. Definitions.**

### **DEFINITIONS**

(a) The definitions in Section 1900 (b), Chapter 3, Title 13 of the California Code of Regulations apply with the following additions:

(1) “Alternate Fuel” means any fuel that will reduce non-methane hydrocarbons (on a reactivity-adjusted basis), NO<sub>x</sub>, CO, and the potential risk associated with toxic air contaminants as compared to gasoline or diesel fuel and would not result in increased deterioration of the engine. Alternate fuels include, but are not limited to, methanol, ethanol, liquefied petroleum gas, compressed natural gas, and electricity.

(2) “ARB Enforcement Officer” means any officer or employee of the Air Resources Board so designated in writing by the Executive Officer or by the Executive Officer’s designee.

(3) “Assembly-Line Tests” are those tests or inspections that are performed on or at the end of the assembly-line.

(4) “Basic Engine” means an engine manufacturer’s description of their unique combination of engine displacement, number of cylinders, fuel system, emission control system, and other engine and emission control system characteristics as determined or specified by the Executive Officer.

(5) “Calendar Year” is the twelve month period commencing on January 1 through December 31.

(6) “Certification Value” means the product of the measured emissions of the prototype engine at zero hours and the (calculated or assigned) deterioration factor.

(7) “Complete Engine Assembly” or “Engine Configuration” means an assembly of a basic engine and all of the specific applicable components (e.g., air intake, fuel and exhaust systems, etc.) and calibrations (e.g., carburetor jet size, valve timing, electronic software/firmware, etc.) required for the assembly to be installed in new equipment.

(8) “Compliance testing” means ARB directed emissions tests and inspections of a reasonable number of production engines and/or equipment that are offered for sale, or manufactured for sale, in California in order to verify compliance with the applicable emission standards. The emissions tests may be conducted at ARB, contracted out facilities, or at the manufacturer’s facility. The testing will be done at the expense of the manufacturer.

(9) “Confirmatory testing” means ARB directed emissions tests and inspections of

the test engines and/or test equipment used by the manufacturer to obtain test data for submittal with the certification application. The emissions tests may be conducted at ARB, contracted out facilities or at the manufacturer's facility. The testing will be done at the expense of the manufacturer.

(10) "Crankcase Emissions" means airborne substances emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication system.

(11) "Deterioration Factor" means the calculated or assigned number that represents the certification engine's emissions change over the durability period. It is multiplied by zero hour (new) engine test results to determine the engine family compliance level. The deterioration factor is determined as per the Test Procedures. See "Emission Durability Period" below.

(12) "Emission Control System" includes any component, group of components, or engine modification that controls or causes the reduction of substances emitted from an engine.

(13) "Emissions Durability Period" is the period that represents an engine's useful life. The emissions durability period is selected from the choices listed in the Test Procedures. The durability periods are also noted in the table in section 2433 (b). The emissions durability period is used to determine an engine family's deterioration factors.

(14) "Emissions Durability Values" means emissions from an engine that has accumulated service equivalent to the engine's emission durability period, or the result of the product of the zero hour (new) engine test results and the appropriate deterioration factor (e.g., the certification values). The Executive Officer must approve the methods of service accumulation before the manufacturer begins service accumulation.

(15) "End of Assembly-Line" is defined as that place where the final inspection test or production line test is performed.

(16) "Engine Family" is a subclass of a basic engine based on similar emission characteristics. The engine family is the grouping of engines that is used for the purposes of certification.

(17) "Engine Manufacturer" means the manufacturer granted certification.

(18) "Equipment Manufacturer" means the manufacturer using the engine provided by the engine manufacturer to power equipment or vehicle

(19) "Exhaust Emissions" means substances emitted into the atmosphere from any opening downstream from the exhaust port of an engine.

(20) “Final Calendar Quarter Production” is defined as the calendar quarter in which the production of an engine family ends.

(21) “First Calendar Quarter Production” is defined as the calendar quarter in which the production of an engine family begins.

(22) “Fuel System” means the combination of any of the following components: fuel tank, fuel pump, fuel lines, carburetor or fuel injection components, or all fuel system vents.

(23) “Gross Engine Malfunction” is defined as one yielding an emission value greater than the sum of the mean plus three (3) times the standard deviation. This definition applies only for determination of control limits.

(24) “Model year” means the manufacturer's annual production period which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year.

(25) “New Engine” is defined as an engine’s ownership has not been transferred to the ultimate consumer.

(26) “New Equipment” means an equipment’s ownership has not been transferred to the ultimate consumer.

(27) “Off-Road Large Spark-ignition Engines” or “LSI Engines” means any engine that produces a gross horsepower 25 and greater horsepower or is designed (e.g., through fueling, engine calibrations, valve timing, engine speed modifications, etc.) to produce 25 and greater horsepower. If an engine family has models at or above 25 horsepower and models below 25 horsepower, only the models at or above 25 horsepower would be considered LSI engines. The engine’s operating characteristics are significantly similar to the theoretical Otto combustion cycle with the engine’s primary means of controlling power output being to limit the amount of air that is throttled into the combustion chamber of the engine. LSI engines or alternate fuel powered LSI internal combustion engines are designed for powering, but not limited to powering, forklift trucks, sweepers, generators, and industrial equipment and other miscellaneous applications. All engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air Act, as amended, and as defined by regulation of the Environmental Protection Agency, are specifically excluded from this category.

Specifically excluded from this category are: 1) engines operated on or in any device used exclusively upon stationary rails or tracks; 2) engines used to propel marine vessels; 3) internal combustion engines attached to a foundation at a location for at least 12 months; 4) off-road recreational vehicles and snowmobiles; and 5) stationary or transportable gas turbines for power generation.

(28) “Off-Road Vehicle” or “Off-Road Equipment” means any non-stationary device, powered by an internal combustion engine or motor, used primarily off the highways to propel, move, or draw persons or property including any device propelled, moved, or drawn exclusively by human power, and used in, but not limited to, any of the following applications: Marine Vessels, Construction/Farm Equipment, Locomotives, Small Off-Road Engines, Off-Road Motorcycles, and Off-Highway Recreational Vehicles.

(29) “Otto Cycle Engine” means a type of engine with operating characteristics significantly similar to the theoretical Otto combustion cycle. The primary means of controlling power output in an Otto cycle engine is by limiting the amount of air and fuel which can enter the combustion chambers of the engine. As an example, gasoline-fueled engines are Otto cycle engines.

(30) “Production Line Test” is defined as the emissions test performed on a sample of production engines produced for sale in California and conducted according to the Test Procedures.

(31) “Representative Engine Sample” means that the sample is typical of the engine family or engine family group as a whole (as defined in the Test Procedures). Except as provided in Section 2437, a representative sample would not include a low volume subgroup of the engine family or engine family group.

(32) “Scheduled Maintenance” means any adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems required by the manufacturer that is performed on a periodic basis to prevent part failure or equipment or engine malfunction, or anticipated as necessary to correct an overt indication of malfunction or failure for which periodic maintenance is not appropriate.

(33) “Test Procedures” means the procedures specified in both Part I and Part II of the “California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines”, and as specified in Section 2433(c).

(34) “Test Sample” means the collection of engines selected from the population of an engine family for emission testing.

(35) “Ultimate Purchaser” means the first person who in good faith purchases a new LSI engine or equipment using such engine for purposes other than resale.

(36) “Unscheduled Maintenance” means any inspection, adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems that is performed to correct or diagnose a part failure that was not anticipated.

(37) “Warrantable Condition” means any condition of an engine that requires the

manufacturer to take corrective action pursuant to Section 2435.

(38) “Warranted Part” means any emissions-related part installed on a engine by the equipment or engine manufacturer, or installed in a warranty repair, which is listed on the warranty parts list.

(39) “Warranty Period” means the period of time, either in years or hours of operation, that the engine or part is covered by the warranty provisions.

(40) “Warranty Station” means a service facility authorized by the equipment or engine manufacturer to perform warranty repairs. This includes all manufacturer distribution centers that are franchised to service the subject equipment or engines.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.



## **2432. Test Procedures**

Test procedures referred to in this chapter may be obtained from the State Air Resources Board at 9528 Telstar Avenue, El Monte, California 91731.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

**2433. Exhaust Emission Standards and Test Procedures - Off- Road Large Spark-ignition Engines.**

(a) This section applies to new off-road large spark-ignition engines produced on or after January 1, 2001. For the purpose of this section, these engines are also referred to as “new off-road LSI engines”.

(b) (1) Exhaust emissions from off-road large spark-ignition engines manufactured for sale, sold, or offered for sale in California, or that are introduced, delivered or imported into California for introduction into commerce, must not exceed:

Exhaust Emission Standards  
(grams per brake horsepower-hour)  
[grams per kilowatt-hour]

Model Year	Engine Displacement	Durability Period (hours)	Hydrocarbon plus Oxides of Nitrogen	Carbon Monoxide
2001 thru 2003	< 1.0 liter	N/A	5.0	37.0
2001 thru 2003	1.0 liter or greater	N/A	3.0	37.0
2004 and subsequent	< 1.0 liter	3000 hours or 5 years	5.0	37.0
2004 and subsequent	1.0 liter or greater	5000 hours or 7 years	3.0	37.0

(2) No crankcase emissions may discharge into the ambient atmosphere from any new 2004 or later model year off-road LSI engines.

(c) The test procedures for determining certification and compliance with the standards for exhaust emissions from new off-road LSI engines sold in the state are set forth in “California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines,” adopted \_\_\_\_\_.

(d) [Reserved]

(e) No new engines may be produced for sale to replace pre-2001 model engines after January 1, 2004, unless such new those engines comply with the 2004 model emission standards.

(2) (A) A new off-road large spark-ignition engine intended solely to replace an engine in a piece of off-road equipment that was originally produced with an engine manufactured prior to the applicable implementation date as described in paragraph (b), shall not be subject to the emissions requirements of paragraph (b) provided that:

(i) The engine manufacturer has ascertained that no engine produced by itself or the manufacturer of the engine that is being replaced, if different, and certified to the requirements of this article, is available with the appropriate physical or performance characteristics to repower the equipment; and

(ii) Unless an alternative control mechanism is approved in advance by the Executive Officer, the engine manufacturer or its agent takes ownership and possession of the engine being replaced; and

(iii) The replacement engine is clearly labeled with the following language, or similar alternate language approved in advance by the Executive Officer:

**THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA OFF-ROAD OR ON-HIGHWAY EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE IN AN OFF-ROAD VEHICLE OR PIECE OF OFF-ROAD EQUIPMENT WHOSE ORIGINAL ENGINE WAS NOT CERTIFIED IS A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.**

(B) At the beginning of each model year, the manufacturer of replacement engines must provide, by engine model, an estimate of the number of replacement engines it expects to produce for California for that model year, and a description of the physical or performance characteristics of those models that indicate that a certified replacement is not available as per paragraph (A) .

(C) At the conclusion of the model year, the manufacturer must provide, by engine model, the actual number of replacement engines produced for California during the model year.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## **2434. Emission Control Labels - 2001 and Later Off-Road Large Spark-ignition Engines**

### **(a) Purpose.**

The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for engines to meet the applicable emission standards. The purpose of these specifications is to require engine manufacturers to affix a label (or labels) on each production engine (or equipment) to provide the engine or equipment owner and service mechanic with information necessary for the proper maintenance of these parts in customer use.

### **(b) Applicability. These specifications apply to:**

- (1) 2001 and later model year off-road LSI engines, that have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.
- (2) Engine manufacturers and original equipment manufacturers, as applicable, that have certified such engines.
- (3) Original equipment manufacturers, regardless of whether they have certified the engine, if their equipment obscures the emission control labels of such certified engines.

### **(c) Label Content and Location.**

(1) A metal tune-up label must be welded, riveted or otherwise permanently attached to the engine block or other major component in such a way that it will be readily visible after installation of the engine in the equipment. If the equipment obscures the label on the engine, the equipment manufacturer must attach a supplemental label such that it is readily visible.

(2) In selecting an acceptable location, the manufacturer must consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each label must be affixed in such a manner that it cannot be removed without destroying or defacing the label, and must not be affixed to any part which is likely to be replaced during the equipment's useful life. The label(s) must not be affixed to any component which is easily detached from the engine.

(3) In addition, an engine serial number must be stamped on the engine block or stamped on a metal label riveted to the engine block. Engine manufacturers must keep records such that the engine serial number can easily be used to determine if an engine was certified for the applicable model year.

(4) The label must be in the English language and use block letters and numerals which must be of a color that contrasts with the background of the label.

(5) The label must contain the following information:

(A) The label heading must read:

“Important Engine Information.”

(B) Full corporate name and trademark of the manufacturer.  
(C) “THIS ENGINE IS CERTIFIED TO OPERATE ON (specify operating fuel(s)).”

(D) Identification of the Exhaust Emission Control System.

Abbreviations may be used and must conform to the nomenclature and abbreviations found in the Society of Automotive Engineers document J1930 which is incorporated by reference in Section 1977, Title 13, CCR, entitled “Diagnostic Acronyms, Terms, and Definitions for Electrical/Electronic Systems”.

(E) The maintenance specifications and adjustments recommended by the engine manufacturer, including, as applicable: spark plug gap width, valve lash, ignition timing, idle air/fuel mixture setting procedure and value (e.g., idle CO, idle speed drop), high idle speed. These specifications must indicate the proper transmission position, (if applicable), during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. If the manufacturer does not recommend adjustment of the foregoing specifications, the manufacturer must include in lieu of the “specifications” the single statement “No other adjustments needed.” For all engines, the instructions for tune-up adjustments must be sufficiently clear on the label to preclude the need for a mechanic or equipment owner to refer to another document in order to correctly perform the adjustments.

(F) Any specific fuel or engine lubricant requirement (e.g., research octane number, engine lubricant type).

(G) The date of engine manufacture (month and year).

(H) An unconditional statement of compliance with the appropriate model year (for 2001-2003) or (2004 and subsequent) California regulations for the specific emission durability period; for example, “This engine conforms to 2002 California regulations for off-road large spark-ignition engines.” or “This engine conforms to 2006 California regulations for off-road large spark-ignition engine with an emission durability period of 3000 (or 5000) hours.” The specific durability period must also be stated in the owner’s manual and on the exterior of the equipment, as applicable.

(I) Total engine displacement (in cubic inches and/or liters) of the engine upon which the engine label is attached.

(J) The engine family identification (i.e., engine family name and manufacturer’s own engine group/code).

(6) (A) The manufacturer of any engine certified with a clean fuel (i.e. natural gas ) must at the time of engine manufacture, affix a permanent legible label specifying the appropriate operating fuel(s).

(B) The label must be located immediately adjacent to each fuel tank filler inlet and outside of any filler inlet compartment. It must be located so that it is readily visible to any person introducing fuel to such filler inlet; provided, however, that the Executive Officer must upon application from an engine manufacturer, approve other label locations that achieve the purpose of this paragraph. If the engine is manufactured separately from the equipment, the label must be affixed to the engine and located so that it is readily visible. Such

labels must be in English and in block letters which must be of a color that contrasts with their background.

(d) An engine label may state that the engine or equipment conforms to any applicable federal emission standards for new engines, or any other information that such manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of the equipment or engine.

(e) Supplemental Engine Label Content and Location.

(1) When a final equipment assembly that is marketed to any ultimate purchaser is manufactured and the engine label attached by the engine manufacturer is obscured (i.e., not readily visible), the manufacturer of the final equipment assembly (i.e., original equipment manufacturer) must attach a supplemental engine label upon the engine or equipment. The supplemental engine label must be plastic or metal, and must be welded, riveted or otherwise attached permanently to an area of the engine or equipment assembly so as to be readily visible to the average person.

(2) The manufacturer required to attach a supplemental engine label must consider the possibility of accidental damage to the supplemental engine label in the determination of the label location. Such a label must not be attached to any engine or equipment component that is likely to be replaced during the useful life of the engine or equipment (as applicable). Such a label must not be attached to any engine or equipment component that is detached easily from the engine or equipment (as applicable).

(3) The supplemental engine label information must be written in the English language and use block letters and numerals (i.e., sans serif, upper-case characters) that must be of a color that contrasts with the background of the label.

(4) A supplemental engine label must contain the information as specified in Subsection (c)(4), except that the date of engine manufacture specified in (c)(4)(G) may be deleted from the supplemental engine label. When the date of engine manufacture does not appear on the supplemental engine label, the responsible original equipment manufacturer must display (e.g., label, stamp, etc.) the date elsewhere on the engine or equipment so as to be readily visible.

(f) As used in these specifications, readily visible to the average person means that the label must be readable from a distance of eighteen inches (46 centimeters) without any obstructions from equipment or engine parts (including all manufacturer available optional equipment) except for flexible parts (e.g., vacuum hoses, ignition wires) that can be moved out of the way without disconnection. Alternatively, information required by these specifications to be printed on the label must be no smaller than 8 point type size (2 millimeter in height) provided that no equipment or engine parts (including all manufacturer available optional equipment), except for flexible parts, obstruct the label.

(g) The labels and any adhesives used must be designed to withstand, for the engine's or equipment's total expected life, typical equipment environmental conditions in the area where the label is attached. Typical equipment environmental conditions must include, but are not

limited to, exposure to engine fuels, lubricants and coolants (e.g., diesel fuel, motor oil, water, ethylene glycol). The manufacturer must submit, with its certification application, a statement attesting that its labels comply with these requirements.

(h) The manufacturer must obtain approval from the Executive Officer for all label formats and locations prior to use. Approval of the specific maintenance settings is not required; however, the format for all such settings and tolerances, if any, is subject to review. If the Executive Officer finds that the information on the label is vague or subject to misinterpretation, or that the location does not comply with these specifications, he or she may require that the label or its location be modified accordingly.

(i) Samples of all actual production labels used within an engine family must be submitted to the Executive Officer within thirty days after the start of production. Engine manufacturers must provide samples of tier own applicable production labels, and samples of applicable production original equipment manufacturer labels that are accessible to the engine manufacturer due to the direct market arrangement between such manufacturers.

(j) The Executive Officer may approve alternate label locations or may, upon request, waive or modify the label content requirements provided that the intent of these specifications is met.

(k) The manufacturer of any engine must furnish to the Executive Officer, at the beginning of the model year, any engine identification number coding system which identifies whether such engine(s) are covered by an Executive Order.

(l) (1) If the Executive Officer finds any engine manufacturer using labels that are different from those approved or that do not substantially comply with the readability or durability requirements set forth in these specifications, the engine manufacturer will be subject to revocation or suspension of Executive Orders for the applicable engine families, or enjoined from any further sales; or distribution, of such noncompliant engine families, or subgroups within the engine families, in the State of California pursuant to Section 43017 of the Health and Safety Code. Before seeking to enjoin an engine manufacturer, the Executive Officer will consider any information provided by the engine manufacturer. In addition, the engine manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(2) If the Executive Officer finds any original equipment manufacturer using labels for which it has responsibility for attaching that are different from those approved or that do not substantially comply with the readability or durability requirements set forth in these specifications, the equipment manufacturer will be subject to being enjoined from any further sales, or distribution, of the applicable equipment product line that uses such noncompliant labels in the State of California pursuant to Section 43017 of the Health and Safety Code. Before seeking to enjoin an equipment manufacturer, the Executive Officer will consider any information provided by the equipment manufacturer. In addition, the equipment manufacturer may be subject

to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43017, 43018, 43101, 43102, and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.



## **2435. Defects Warranty Requirements for 2001 and Later Off-Road Large Spark-ignition Engines.**

(a) Applicability. This section applies to new 2001 and later model year off-road large spark-ignition engines. The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser. The use of alternative fuels must not void the warranties on any engine certified to use such fuel.

(b) General Emissions Warranty Coverage. The manufacturer of each off-road large spark-ignition engine must warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship which cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for engines having engine displacements greater than 1200 cubic centimeter a period of six years or 4000 hours of operation, whichever occurs first, and for engines having engine displacements equal or less than 1200 cubic centimeter a period of four years or 2400 hours of operation, whichever occurs first. In the absence of a device to measure hours of use, the engine must be warranted for a period of seven years or five years, as applicable.

(c) The warranty on emissions-related parts must be interpreted as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by Subsection (e) must be warranted for the warranty period defined in Subsection (b)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

(2) Any warranted part that is scheduled only for regular inspection in the written instructions required by Subsection (e) must be warranted for the warranty period defined in Subsection (b)(2). A statement in such written instructions to the effect of "repair or replace as necessary" must not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.

(3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions required by Subsection (e) must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the

part.

(4) Repair or replacement of any warranted part under the warranty provisions of this article must be performed at no charge to the owner at a warranty station.

(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at all manufacturer distribution centers that are franchised to service the subject engines.

(6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.

(7) The engine manufacturer must be liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the engine's warranty period defined in Subsection (b)(2), the engine manufacturer must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part, as defined in Section 1900(B)(13), Title 13, may be used in the performance of any maintenance or repairs and must be provided without charge to the owner. It is not necessary for replacement parts to be the same brand or by the same manufacturer as the original part sold with the engine. Such use must not reduce the warranty obligations of the engine manufacturer.

(10) Add-on or modified parts, as defined in Section 1900 (B)(1) and (B)(10), Title 13, may not be used. Such use must be grounds for disallowing a warranty claim made in accordance with this article. The engine manufacturer must not be liable under this article to warrant failures of warranted parts caused by the use of such an add-on or modified part.

(11) The Executive Officer may request and, in such case, the engine manufacturer must provide, any documents that describe that manufacturer's warranty procedures or policies.

(d) Each manufacturer must include a copy of the following emission warranty parts list with each new engine, using those portions of the list applicable to the engine.

(1) Fuel Metering System

(A) Fuel injection system.

(B) Air/fuel ratio feedback and control system.

(C) Carburetor system (internal parts and/or pressure regulator or fuel mixer or injection system).

(D) Cold start enrichment system.

(2) Air Induction System

(A) Intake manifold or air intake system.

(B) Air mass sensor assembly

(C) Turbocharger/supercharger systems.

(3) Exhaust Gas Recirculation (EGR) System

(A) EGR valve body, and carburetor spacer if applicable.

(B) EGR rate feedback and control system.

(4) Air injection System

(A) Air pump or pulse valve.

- (B) Valves affecting distribution of flow.
  - (C) Distribution manifold.
- (5) Catalyst or Thermal Reactor System
  - (A) Catalytic converter.
  - (B) Thermal reactor.
  - (C) Exhaust manifold.
- (6) Positive Crankcase Ventilation (PCV) System.
  - (A) PCV Valve.
  - (B) Oil Filler Cap.
- (7) Ignition Control System
  - (A) Engine Control Module (ECM)
  - (B) Ignition module(s)
- (8) Miscellaneous items Used in Above Systems
  - (A) Vacuum, temperature, and time sensitive valves and switches.
  - (B) Sensors used for electronic controls.
  - (C) Hoses, belts, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware.
  - (D) Pulleys, belts and idlers.

(e) Each manufacturer must furnish with each new engine written instructions for the maintenance and use of the engine by the owner. The instructions must be consistent with this article and applicable regulations contained herein.

(f) Each manufacturer must submit the documents required by Subsections (d) and (e) with the manufacturer's preliminary application for engine certification for approval by the Executive Officer. Approval by the Executive Officer of the documents required by Subsections (d) and (e) must be a condition of certification. The Executive Officer must approve or disapprove the documents required by Subsections (d) and (e) within 90 days of the date such documents are received from the manufacturer. Any disapproval must be accompanied by a statement of the reasons therefor. In the event of disapproval, the manufacturer may file for an adjudicative hearing under Title 17, California Code of Regulation Subchapter 1.25 to review the decision of the Executive Officer.

(g) In the application, each manufacturer must include a statement concerning proper maintenance of the engine to maximize emissions performance. The statement must include, but not be limited to, information on air filter care and replacement schedule, proper fueling and fuel mixing, engine maintenance, and a maintenance schedule to ensure that the owner returns to a servicing center to check for deposits, debris build- up, etc.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## **2436. Emission Control System Warranty Statement.**

(a) Each manufacturer must furnish a copy of the following statement with each new off-road large spark-ignition engine, using those portions of the statement applicable to the engine.

### **CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT**

#### **YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The **California Air Resources Board** (and manufacturer's name, optional) is pleased to explain the **emission control system warranty** on your **(current model year)** (equipment type or off-road large spark-ignition) engine. In California, new off-road large spark-ignition (LSI) engines must be designed, built and equipped to meet the State's stringent anti-smog standards. (Manufacturer's name) must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor, regulator or fuel-injection system, ignition system, engine computer unit (ECM), catalytic converter and air induction system. Also included may be sensors, hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, (manufacturer's name) will repair your LSI engine at no cost to you including diagnosis, parts and labor.

#### **MANUFACTURER'S WARRANTY COVERAGE:**

The **(current model year)** off-road large spark-ignition engines are warranted for **(warranty period)**. If any emission-related part on your engine is defective, the part will be repaired or replaced by (manufacturer's name).

#### **OWNER'S WARRANTY RESPONSIBILITIES:**

- As the off-road LSI engine owner, you are responsible for the performance of the **required maintenance listed in your owner's manual**. (Manufacturer's name) recommends that you retain all receipts covering maintenance on your off-road engine, but (manufacturer's name) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the off-road large spark-ignition engine owner, you should however be aware that (manufacturer's name) may deny you warranty coverage if your off-road large

spark-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

- Your engine is designed to operate on (**specific fuel**) only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.
- You are responsible for initiating the warranty process. The ARB suggests that you present your off-road large spark-ignition engine to a (manufacturer's names) dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact (Insert chosen manufacturer's contact) at **1-XXX-XXX-XXXX**.

(b) Commencing with the 2001 model year, each manufacturer must furnish with each new engine a warranty statement that generally describes the obligations and rights of the engine manufacturer and owner under this article. Engine manufacturers must also include in the warranty statement a phone number the customer may use to obtain their nearest franchised service center.

(c) Each manufacturer must submit the documents required by Subsections (a) and (b) with the manufacturer's preliminary application for new engine certification for approval by the Executive Officer. The Executive Officer may reject or require modification of the documents to the extent the submitted documents do not satisfy the requirements of Subsections (a) and (b). Approval by the Executive Officer of the documents required by Subsections (a) and (b) must be a condition of certification. The Executive Officer must approve or disapprove the documents required by Subsections (a) and (b) within 90 days of the date such documents are received from the manufacturer. Any disapproval must be accompanied by a statement of the reasons therefor. In the event of disapproval, the manufacturer may petition the Board to review the decision of the Executive Officer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## **2437. New Engine Compliance and Production Line Testing - New Off-Road Large Spark-ignition Engines Selection, Evaluation, and Enforcement Action.**

### **(a) Compliance Test Procedures**

(1) These procedures are applicable, commencing with the 2004 model year, to any engine family group (as defined in Sections 2 and 11 of the “California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines”) or any subgroup within an engine family group selected for compliance testing pursuant to this section.

(2) The Executive Officer may, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, order an engine manufacturer to make available for compliance testing and/or inspection a reasonable number of engines, and may direct that the engines be delivered to the state board at the Haagen- Smit Laboratory, 9528 Telstar Avenue, El Monte, California or where specified by the Executive Officer. The Executive Officer may also, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, have a manufacturer compliance test and/or inspect a reasonable number of engines at the manufacturer's facility under the supervision of an ARB Enforcement Officer. Engines must be representatively selected from sources specified by the Executive Officer according to a method approved by him/her, that insofar as practical must exclude engines that would result in an unreasonable disruption of the manufacturer's distribution system. To the extent practical, the Executive Officer must test a representative configuration (as defined in Section 3 of the “California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines”) from the engine family group in order to minimize manufacturers' expense and inconvenience in testing different engine configurations.

A subgroup of an engine family group may be selected for compliance testing only if the Executive Officer has reason to believe that the emissions characteristics of that subgroup are substantially in excess of the emissions of the engine family group as a whole.

(3) For all 2001 and subsequent model year off-road large spark-ignition engines selected for compliance testing, the selection and testing of engines and the evaluation of data must be made in accordance with the procedures set forth herein.

(4) For manufacturers that have more than one engine family group, the Air Resources Board or its designated laboratory may procure and test at the manufacturer's expense no more than one engine family group per year, if compliance testing is required.

Notwithstanding the above, if a manufacturer fails to demonstrate compliance with the emission standards after one engine family group has been tested, the ARB or its designated laboratory may test additional engine family groups at the manufacturer's expense, until compliance is demonstrated on one engine family group or all of a manufacturer's engine family groups have been tested. However, the ARB may conduct engine enforcement testing pursuant to the engine test procedures specified in Section 2433, at its own expense. In such an instance, the Executive Officer must order testing only in those cases where evidence such as production

line test data or in-use test data indicate that engines may not be in compliance.

(5) All testing must be conducted in accordance with the applicable model year certification emission test procedures. Break-in before testing may be performed on test engines to the same extent it is performed on production-line testing engines (See subsection (b)). No break-in or modifications, adjustments, or special preparation or maintenance will be allowed on engines chosen for compliance testing without the written consent of the Executive Officer. Such consent must not be unreasonably withheld where such adjustment or alteration is required to render the engine testable and reasonably operative.

(6) If the manufacturer elects to specify a different break-in or adjustments, they will be performed by the manufacturer under the supervision of ARB personnel.

(7) Correction of damage or maladjustment that may reasonably be found to have resulted from shipment of the engine is permitted only after testing the engine, except where 100 percent of the manufacturer's production is given that inspection or maintenance by the manufacturer's own personnel. Exceptions are allowed in the cases where the damage results in the engine being unsafe to operate, inoperable, or unable to complete the emission test. Additionally, an exception is allowed if the damage results in engine performance deficiencies that would be obvious in customer service and that would cause the customer to seek repair of the engine. The manufacturer may request that the engine be repaired from shipping damage, and be retested. If the Executive Officer concurs, the engine may be retested, and the original test results may be replaced by the after-repair test results.

(8) Engines must be randomly chosen from the selected engine family group or subgroup. Prior to the start of testing, manufacturers must indicate that sampling plan (as described in paragraphs (9) and (10), below) they will use. Once testing has begun, manufacturers may not switch to the other sampling plan; the generated test results will be final. Each chosen engine must be tested according to the "California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-ignition Engines" ("Test Procedures") to determine its emissions. Unique specialty hardware and personnel normally necessary to prepare the engine for the performance of the test as set forth in the Test Procedures must be supplied by the manufacturer within seven days after request. Failure to supply this unique specialty hardware or personnel may not be used by the manufacturer as a cause for invalidation of the subsequent tests.

(9) Engines must be tested in groups of five until a "Pass" or Fail" decision is reached for each pollutant independently for the engine family or subgroup in accordance with the following table:

<u>Number of Engines Tested</u>	<u>Decide "Fail" If "U" is greater than or equal to</u>	<u>Decide "Pass" If "U" is less than or equal to</u>
5	2.18	-0.13
10	2.11	0.51
15	2.18	0.88
20	2.29	1.16

where:

$$U = \frac{\sum_{I=1}^n (x_i - \mu_o)}{(\sum_{I=1}^n (x_i - \mu_o)^2)^{0.5}}$$

$x_i$  = the projected emissions of one pollutant for the ith engine tested.

$\mu_o$  = the applicable calendar year emission standard for that pollutant.

$n$  = the number of engines tested.

(10) The Executive Officer will find that a group of engines has failed the compliance testing pursuant to the above table if the Executive Officer finds that the average emissions of the engines within the selected engine family or subgroup exceed the applicable calendar year new engine emission standard for at least one pollutant.

(11) If no decision for a pollutant or pollutants; can be reached after 20 engines have been tested, the Executive Officer will not make a "Fail" decision for the selected engine family or subgroup on the basis of these 20 tests alone. Under these circumstances the Executive Officer will elect to test 10 additional engines. If the average emissions from the 30 engines tested exceed any one of the exhaust emission standards for which a "Pass" decision has not been previously made, the Executive Officer will render a "Fail" decision.

(12) If the Executive Officer determines, in accordance with the procedures set forth in Subsection (a) that an engine family, or any subgroup within an engine family, exceeds the emission standards for one or more pollutants, the Executive Officer will:

(A) Notify the engine manufacturer that the engine manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant engines in the State of California, or enjoined from any further sales or



distribution, of the noncompliant engines in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending the Executive Order, or seeking to enjoin an engine manufacturer, the Executive Officer will consider production line test results, if any, and any additional test data or other information provided by the engine manufacturer and other interested parties. In addition, the engine manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(B) Notify the equipment manufacturer that the equipment manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant engines in the State of California, or being enjoined from any further sales, or distribution, of the equipment manufacturer's equipment product line(s) that are, or utilize engines that are, noncompliant with the applicable emission regulations pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending the Executive Order, or seeking to enjoin an equipment manufacturer, the Executive Officer will consider production line test results, if any, and any additional test data or other information provided by the equipment manufacturer and other interested parties. In addition, the equipment manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(13) Engines selected for inspection must be checked to verify the presence of those emissions-related components specified in the engine manufacturer's application for certification, and for the accuracy of any adjustments, part numbers and labels specified in that application. If any engine selected for inspection fails to conform to any applicable law in Part 5 (commencing with Section 43000) of Division 26 of the Health and Safety Code, or any regulation adopted by the state board pursuant thereto, other than an emissions standard applied to new engines to determine "certification" as specified in Chapter 9, the Executive Officer will:

(A) Notify the engine manufacturer and may seek to revoke or suspend the Executive Order authorizing sales and distribution or enjoin the engine manufacturer from any further sales, or distribution, of the applicable noncompliant engine families or subgroups within the engine families in the State of California pursuant to Section 43017 of the Health and Safety Code. Before revoking or suspending the Executive Order authorizing sales and distribution of the applicable noncompliant engine families or subgroups within the State of California, or seeking to enjoin an engine manufacturer, the Executive Officer will consider any information provided by the engine manufacturer and other interested parties. In addition, the engine manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(B) Notify the equipment manufacturer and may seek to revoke or suspend the Executive Order authorizing sales and distribution or enjoin the equipment manufacturer from any further sales, or distribution, in the State of California of the equipment

manufacturer's equipment product line(s) that are, or utilize engines that are, noncompliant with the applicable emission regulations pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending the Executive Order authorizing sales and distribution of the applicable noncompliant equipment, or seeking to enjoin an equipment manufacturer, the Executive Officer will consider any information provided by the equipment manufacturer and other interested parties. In addition, the equipment manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(b) 2004 and Subsequent Model Cumulative Sum Production Line Test Procedures

(1) The 2004 and subsequent model year off-road large spark-ignition engines, that have been certified for sale in California, are subject to production line testing performed according to the requirements specified herein.

(A) Standards and Test Procedures. The emission standards, exhaust sampling and analytical procedures are those described in the Test Procedures, and are applicable to engines tested only for exhaust emissions. The production line test procedures are specified in conjunction with the Test Procedures. An engine is in compliance with these production line standards and test procedures only when all portions of these production line test procedures and specified requirements from the Test Procedures are fulfilled, except any adjustable engine parameters must be set to any value or position that is within the range available to the ultimate purchaser.

(B) Air Resources Board (ARB) personnel and mobile laboratories must have access to engine or equipment assembly plants, distribution facilities, and test facilities for the purpose of engine selection, testing, and observation. Scheduling of access must be arranged with the designated engine manufacturer's representative and must not unreasonably disturb normal operations (See Test Procedures).

(2) Engine Sample Selection.

(A) At the start of each quarter for the model year, the engine manufacturer will begin to randomly select engines from each engine family for production line testing, according to the criteria specified herein. The engines must be representative of the engine manufacturer's California sales. Each engine will be selected from the end of the assembly line. All engine models within the engine family must be included in the sample pool. Each selected engine for production line testing must pass the inspection test, by being equipped with the appropriate emission control systems certified by the ARB. The procedure for randomly selecting engines or units of equipment must be submitted to the Chief, Mobile Source Operations Division, 9528 Telstar Avenue, El Monte, CA, 91731, prior to the start of production for the first year of production.

(i) For newly certified engine families: After two engines are tested, the manufacturer will calculate the required sample size for the model year according to the Sample Size Equation in paragraph (4) of this subsection.

(ii) For carry-over engine families: After one engine is tested, the manufacturer will combine the test with the last test result from the previous model year and

then calculate the required sample size for the model year according to the Sample Size Equation in paragraph (4) of this subsection.

(B) Engine manufacturers must provide actual California sales, or other information acceptable to the Executive Officer, including, but not limited to, an estimate based on market analysis and federal production or sales.

(3) Engine Preparation and Preconditioning

(A) No emissions tests may be performed on an engine prior to the first production line test.

(B) The engine or unit of equipment must be tested after the engine manufacturer's recommended break-in period. The engine manufacturer must submit to the Executive Officer the schedule for engine break-in and any changes to the schedule with each quarterly report. This schedule must be adhered to for all production line testing within an engine family and subgroup or engine family and assembly plant as appropriate.

(C) If an engine or unit of equipment is shipped to a remote facility for production line testing, and adjustment or repair is necessary because of such shipment, the engine manufacturer must perform the necessary adjustments or repairs only after the initial test of the engine or equipment. Engine manufacturers must report to the Executive Officer in the quarterly report, all adjustments or repairs performed on engines or equipment prior to each test. In the event a retest is performed, a request may be made to the Executive Officer, within ten days of the production quarter, for permission to substitute the after-repair test results for the original test results. The Executive Officer will either affirm or deny the request by the engine manufacturer within ten working days from receipt of the request.

(D) If an engine manufacturer determines that the emission test results of an engine or unit of equipment are invalid, the engine or equipment must be retested. Emission results from all tests must be reported. The engine manufacturer must include a detailed report on the reasons for each invalidated test in the quarterly report.

(4) (A) Manufacturers will calculate the required sample size for the model year for each engine family using the Sample Size Equation below. N is calculated from each test result. The number N indicates the number of tests required for the model year for an engine family. N, is recalculated after each test. Test results used to calculate the variables in the Sample Size Equation must be final deteriorated test results as specified in (4)(D)(iii).

$$N = \left[ \frac{(t_{95} \times \sigma)}{(x - STD)} \right]^2 + 1$$

Where:

N	=	required sample size for the model year.
t <sub>95</sub>	=	95% confidence coefficient. It is dependent on the number of tests completed, n, as specified in the table in paragraph (4)(B) of this section. It defines one-tail, 95% confidence intervals.

$\sigma$  = test sample standard deviation calculated from the following equation:

$$\sigma = \sqrt{\frac{\sum (X_i - x)^2}{n - 1}}$$

Where:

$X_i$  = emission test result for an individual engine

$x$  = mean of emission test results of the sample

STD = emission standard

$n$  = The number of tests completed in an engine family

(B) Reserved

(C) Number of Tests (n) & 1-tail Confidence Coefficients

( $t_{95}$ )

n	$t_{95}$	n	$t_{95}$	n	$t_{95}$
2	6.31	12	1.80	22	1.72
3	2.92	13	1.78	23	1.72
4	2.35	14	1.77	24	1.71
5	2.13	15	1.76	25	1.71
6	2.02	16	1.75	26	1.71
7	1.94	17	1.75	27	1.71
8	1.90	18	1.74	28	1.70
9	1.86	19	1.73	29	1.70
10	1.83	20	1.73	30	1.70
11	1.81	21	1.72	$\infty$	1.645

(D) A manufacturer must distribute the testing of the remaining number of engines needed to meet the required sample size N, evenly throughout the remainder of the model year.

(E) After each new test, the required sample size, N, is recalculated

using updated sample means, sample standard deviations and the appropriate 95% confidence coefficient.

(F) A manufacturer must continue testing and updating each engine family's sample size calculations according to paragraphs (4)(A) through (4)(D) of this section until a decision is made to stop testing as described in paragraph (4)(G) of this section or a noncompliance decision is made pursuant to (c)(3)(A)(v).

(G) If, at any time throughout the model year, the calculated required sample size,  $N$ , for an engine family is less than or equal to the sample size,  $n$ , and the sample mean,  $\bar{x}$ , for HC + NO<sub>x</sub> is less than or equal to the emission standard, the manufacturer may stop testing that engine family.

(H) If, at any time throughout the model year, the sample mean,  $\bar{x}$ , for HC + NO<sub>x</sub> is greater than the emission standard, the manufacturer must continue testing that engine family at the appropriate maximum sampling rate.

(I) The maximum required sample size for an engine family (regardless of the required sample size,  $N$ , as calculated in paragraph (4)(A) of this section) is thirty tests per model year.

(J) Manufacturers may elect to test additional randomly chosen engines. All additional randomly chosen engines tested in accordance with the testing procedures specified in Emission Standards and Test Procedures must be included in the Sample Size and Cumulative Sum equation calculations as defined in section (b), respectively.

(4) The manufacturer must produce and assemble the test engines using its normal production and assembly process for engines to be distributed into commerce.

(5) No quality control, testing, or assembly procedures will be used on any test engine or any portion thereof, including parts and subassemblies, that have not been or will not be used during the production and assembly of all other engines of that family, unless the Executive Officer approves the modification in production or assembly procedures.

(c) Calculation of Cumulative Sum (CumSum) Statistic. Each engine manufacturer must review the test results using the following procedure:

$$C_i = \max[0, (C_{i-1} + X_i - (STD + F))]$$

(1) Manufacturers must construct the following CumSum equation for each regulated pollutant for each engine family. Test results used to calculate the variables in the CumSum Equation must be final deteriorated test results as defined in (d)(4)(c).

Where:

$C_i$	=	The current CumSum statistic
$C_{i-1}$	=	The previous CumSum statistic. Prior to any testing, the CumSum statistic = 0 (i.e. $C_0 = 0$ )
$X_i$	=	The current emission test result for an individual engine

STD = Emission standard  
F =  $0.25 \times \sigma$

(2) After each test,  $C_i$  is compared to the action limit, H, the quantity which the CumSum statistic must exceed, in two consecutive tests, before the engine family may be determined to be in noncompliance for purposes of paragraph (c).

H = The Action Limit. It is  $5.0 \times \sigma$ , and is a function of the standard deviation,  $\sigma$ .

$\sigma$  = is the sample standard deviation and is recalculated after each test.

(3) After each engine is tested, the CumSum statistic shall be promptly updated according to the CumSum Equation in paragraph (1) of this section.

(4) If, at any time during the model year, a manufacturer amends the application for certification for an engine family as specified in Sections 17 and 18 of the Test Procedures by performing an engine family modification (i.e. a change such as a running change involving a physical modification to an engine, a change in specification or setting, the addition of a new configuration, changes in calibration, or the use of a different deterioration factor), all previous sample size and CumSum statistic calculations for the model year will remain unchanged.

(5) A failed engine is one whose final deteriorated test result for a regulated pollutant exceeds the emission standard for that pollutant.

(6) An engine family may be determined to be in noncompliance, if at any time throughout the model year, the CUMSUM statistic, C, for a regulated pollutant is greater than the action limit, H, for two consecutive tests.

(7) The engine manufacturer must perform a minimum of two (2) tests per engine family per quarter of production, regardless of whether the conditions of sample size have been met.

(8) All results from the previous quarters of the same model year must be included in the on-going Cumulative Sum analysis, provided that the engine family has not failed (e.g., if three engine of a family were tested in the first quarter, the first test of the second quarter would be considered as the fourth test).

(9) If the Cumulative Sum analysis indicates that an engine family has failed, the engine manufacturer must notify the Chief of the Mobile Source Operations Division in writing and by telephone, within ten (10) working days. Corrective action will be taken as noted in paragraphs (e) and (f) below.

(10) If a manufacturer performs corrective action on a failed engine family and then resumes production, all previous tests will be void, and Cumulative Sum analysis will begin again with the next test.

(11) At the end of the quarter, or when the Cumulative Sum analysis indicates that a decision has been made, the manufacturer must provide all the data accumulated during the quarter.

(d) Calculation and reporting of test results.

(1) Initial test results are calculated following the applicable test procedure. The manufacturer rounds these results, in accordance with ASTM E29-93a, to the number of decimal places contained in the applicable emission standard expressed to one additional significant figure. (ASTM E29-93a has been incorporated by reference.)

(2) Final test results are calculated by summing the initial test results derived in paragraph (a) of this section for each test engine, dividing by the number of tests conducted on the engine, and rounding in accordance with ASTM E29-93a to the same number of decimal places contained in the applicable standard expressed to one additional significant figure.

(3) The final deteriorated test results for each test engine are calculated by applying the appropriate deterioration factors, derived in the certification process for the engine family, to the final test results, and rounding in accordance with ASTM E29-93a to the same number of decimal places contained in the applicable standard expressed to one additional significant figure.

(4) If, at any time during the model year, the CumSum statistic exceeds the applicable action limit, H, in two consecutive tests, the engine family may be determined to be in noncompliance and the manufacturer must notify the Chief of Mobile Sources Operations Division and the Manager of the New Vehicle Audit Section, 9528 Telstar Ave., El Monte, CA 91731, within ten (10) working days of such exceedance by the Cum Sum statistic.

(5) Within 30 calendar days of the end of each quarter, each engine manufacturer must submit to the Executive Officer a report which includes the following information:

(A) The location and description of the manufacturer's or other's exhaust emission test facilities which were utilized to conduct testing reported pursuant to this section;

(B) Total production and sample sizes, N and n, for each engine family;

(C) The applicable emissions standards for each engine family.

(D) A description of the process to obtain engines on a random basis;

(E) A description of the test engines. (i.e., date of test, engine family, engine size, engine or equipment identification number, fuel system, dynamometer power absorber setting in horsepower, engine code or calibration number, and test location).

(F) The date of the end of the engine manufacturer's model year production for each engine family.

(G) For each test conducted,

(i) A description of the test engine, including:

(a) Configuration and engine family identification,

(b) Year, make, and build date,

(c) Engine identification number, and

(d) Number of hours of service accumulated on engine

prior to testing;

(ii) Location where service accumulation was conducted and description of accumulation procedure and schedule;

(iii) Test number, date, test procedure used, initial test results before and after rounding, and final test results for all exhaust emission tests, whether valid or invalid, and the reason for invalidation, if applicable;

(iv) A complete description of any adjustment, modification, repair, preparation, maintenance, and/or testing which was performed on the test engine, was not reported pursuant to any other part of this article, and will not be performed on all other production engines;

(v) The exhaust emission data for HC+NO<sub>x</sub> (or NMHC+NO<sub>x</sub>, as applicable) and CO for each test engine or equipment. The data reported must provide two significant figures beyond the number of significant figures in applicable emission standards.

(vi) The retest emission data, as described in paragraph (D) above for any engine or unit of equipment failing the initial test, and description of the corrective actions and measures taken, including specific component replaced or adjusted.

(vii) A CumSum analysis, as required in paragraph (c), of the production line test results for each engine family;

(viii) Any other information the Executive Officer may request relevant to the determination whether the new engines being manufactured by the manufacturer do in fact conform with the regulations with respect to which the Executive Order was issued;

(ix) For each failed engine as defined in paragraph (c), a description of the remedy and test results for all retests.

(x) Every aborted test data and reason for the aborted test.

(xi) The start and stop dates of batch-produced engine family production.

(xii) The required information for all engine families in production during the quarter regardless of sample size; and

(xiii) The following signed statement and endorsement by an authorized representative of the manufacturer:

This report is submitted pursuant to this article. This production line testing program was conducted in complete conformance with all applicable regulations under the Test Procedures. No emission-related changes to production processes or quality control procedures for the engine family tested have been made during this production line testing program that affect engines from the production line. All data and information reported herein is, to the best of (Company Name) knowledge, true and accurate. I am aware of the penalties associated with violations of the California Code of Regulations and the regulations thereunder. (Authorized Company Representative.)

(H) Each manufacturer must submit a copy of the report that has been stored (e.g., computer disc), or may be transmitted, in an electronically digitized manner, and in a format that is specified by the Executive Officer. This electronically based submission is in addition to the written submission of the report.

(e) Manufacturer Notification of Failure\_



(1) The Executive Officer will notify the engine manufacturer that the engine manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant engines in the State of California, or being enjoined from any further sales, or distribution, of the noncompliant engines in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending, or seeking to enjoin an engine manufacturer, and other interested parties, including, but not limited to corrective actions applied to the noncompliant engine family. In addition, the engine manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(2) The Executive Officer will notify the equipment manufacturer that the equipment manufacturer may be subject to revocation or suspension of the Executive Order authorizing sales and distribution of the noncompliant equipment in the State of California, or being enjoined from any further sales, or distribution, of the noncompliant equipment product line(s) that are , or utilize engines that are, noncompliant with the applicable emission regulations in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to revoking or suspending, or seeking to enjoin an equipment manufacturer, and other interested parties, including, but not limited to corrective actions applied to the noncompliant engine family. In addition, the equipment manufacturer may be subject to, on a per engine basis, any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(f) Suspension and revocation of Executive Order.

(1) The Executive Order is automatically suspended with respect to any engine family failing pursuant to paragraph (c)(5) effective from the time that testing of that engine family is completed.

(2) The Executive Officer may suspend the Executive Order for an engine family which is determined to be in noncompliance pursuant to paragraph (c)(6). This suspension will not occur before fifteen days after the engine family is determined to be in noncompliance.

(3) If the results of testing pursuant to these regulations indicate that engines of a particular family produced at one plant of a manufacturer do not conform to the regulations with respect to which the Executive Order was issued, the Executive Officer may suspend the Executive Order with respect to that family for engines manufactured by the manufacturer at this and all other plants.

(4) Notwithstanding the fact that engines described in the application for certification may be covered by a Executive Order, the Executive Officer may suspend such certificate immediately in whole or in part if the Executive Officer finds any one of the following infractions to be substantial:

(A) The manufacturer refuses to comply with any of the requirements of this subpart.

(B) The manufacturer submits false or incomplete information in any report or information provided to the Executive Officer under this subpart.

(C) The manufacturer renders inaccurate any test data submitted under this subpart.

(D) An ARB enforcement officer is denied the opportunity to conduct activities authorized in this subpart and a warrant or court order is presented to the manufacturer or the party in charge of the facility in question.

(5) The Executive Officer may suspend such certificate immediately in whole or in part if the Executive Officer finds that an ARB enforcement officer is unable to conduct activities authorized in this Section and the Test Procedures because a manufacturer has located its facility in a foreign jurisdiction where local law prohibits those activities.

(6) The Executive Officer shall notify the manufacturer in writing of any suspension or revocation of a Executive Order in whole or in part. A suspension or revocation is effective upon receipt of the notification or fifteen days from the time an engine family is determined to be in noncompliance pursuant to paragraph (c)(5) or (c)(6), whichever is later, except that the certificate is immediately suspended with respect to any failed engines as provided for in paragraph (a) of this section.

(7) The Executive Officer may revoke a Executive Order for an engine family after the certificate has been suspended pursuant to paragraph (b) or (c) of this section if the proposed remedy for the nonconformity, as reported by the manufacturer to the Executive Officer, is one requiring a design change or changes to the engine or emission control system as described in the application for certification of the affected engine family.

(8) Once an Executive Order has been suspended for a failed engine, as provided for in paragraph (a) of this section, the manufacturer must take the following actions before the certificate is reinstated for that failed engine:

(A) Remedy the nonconformity;

(B) Demonstrate that the engine conforms to the emission standards by retesting the engine in accordance with these regulations; and

(C) Submit a written report to the Executive Officer, after successful completion of testing on the failed engine, which contains a description of the remedy and test results for each engine in addition to other information that may be required by this part.

(9) Once an Executive Order for a failed engine family has been suspended pursuant to paragraph (b), (c) or (d) of this section, the manufacturer must take the following actions before the Executive Officer will consider reinstating the certificate:

(A) Submit a written report to the Executive Officer which identifies the reason for the noncompliance of the engines, describes the proposed remedy, including a description of any proposed quality control or quality assurance measures to be taken by the manufacturer to prevent future occurrences of the problem, and states the date on which the remedies will be implemented.

(B) Demonstrate that the engine family for which the Executive Order has been suspended does in fact comply with the regulations of this part by testing as many engines as needed so that the CumSum statistic falls below the action limit. Such testing must comply with the provisions of this Part. If the manufacturer elects to continue testing individual engines after suspension of a certificate, the certificate is reinstated for any engine actually determined to be in conformance with the emission standards through testing in accordance with the applicable test procedures, provided that the Executive Officer has not revoked the certificate pursuant to paragraph (f) of this section.

(10) Once the Executive Order has been revoked for an engine family, if the manufacturer desires to continue introduction into commerce of a modified version of that family, the following actions must be taken before the Executive Officer may issue a certificate for that modified family:

(A) If the Executive Officer determines that the proposed change(s) in engine design may have an effect on emission performance deterioration, the Executive Officer shall notify the manufacturer, within five working days after receipt of the report in paragraph (c)(4) of this section, whether subsequent testing under this subpart will be sufficient to evaluate the proposed change or changes or whether additional testing will be required; and

(B) After implementing the change or changes intended to remedy the nonconformity, the manufacturer must demonstrate that the modified engine family does in fact conform with the regulations of this part by testing as many engines as needed from the modified engine family so that the CumSum statistic, as calculated per aforementioned method, falls below the action limit. When both of these requirements are met, the Executive Officer shall reissue the certificate or issue a new certificate, as the case may be, to include that family. As long as the CumSum statistic remains above the action limit, the revocation remains in effect.

(11) At any time subsequent to a suspension of a Executive Order for a test engine pursuant to paragraph (a) of this section, but not later than 15 days (or such other period as may be allowed by the Executive Officer) after notification of the Executive Officer's decision to suspend or revoke a Executive Order in whole or in part pursuant to paragraphs (b), (c), or (f) of this section, a manufacturer may request a hearing as to whether the tests have been properly conducted or any sampling methods have been properly applied.

(12) Any suspension of a Executive Order under paragraph (e) of this section:

(A) must be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with all applicable requirements and;

(B) need not apply to engines no longer in the possession of the manufacturer.

(13) After the Executive Officer suspends or revokes a Executive Order pursuant to this section and prior to the commencement of a hearing, if the manufacturer demonstrates to the Executive Officer's satisfaction that the decision to suspend or revoke the Executive Order was based on erroneous information, the Executive Officer shall reinstate the Executive Order.

(14) To permit a manufacturer to avoid storing non-test engines while conducting subsequent testing of the noncomplying family, a manufacturer may request that the Executive Officer conditionally reinstate the Executive Order for that family. The Executive Officer may reinstate the Executive Order subject to the following condition: the manufacturer

must commit to recall all engines of that family produced from the time the Executive Order is conditionally reinstated if the CumSum statistic does not fall below the action limit and must commit to remedy any nonconformity at no expense to the owner.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43017, 43018, 43101, 43102, and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## Section 2438

## In-Use Testing Program

### (a) Manufacturer In-Use Testing Program.

Standards and Test Procedures. The emission standards, exhaust sampling and analytical procedures are those described in the Test Procedures, and are applicable to engines tested only for exhaust emissions. The production line test procedures are specified in conjunction with the Test Procedures. An engine is in compliance with these production line standards and test procedures only when all portions of these production line test procedures and specified requirements from the Test Procedures are fulfilled, except any adjustable engine parameters must be set to any value or position that is within the range available to the ultimate purchaser

(1) Within 12 months after completion of a model-year's certification and the issuance of appropriate Executive Orders, the ARB will identify those engine families, and the specific configurations within an engine family, that the manufacturer must subject to in-use testing as described below. For each model year, ARB may identify a number of engine families that is no greater than 25 percent of the number of engine families to which this article is applicable. For those manufacturers producing three or less engine families in a model year, ARB may designate a maximum of one engine family per model year for in-use testing.

(2) For each engine family identified by ARB, engine manufacturers must perform emission testing of an appropriate sample of in-use engines from each engine family. Manufacturers must submit data from this in-use testing to ARB.

(3) An engine manufacturer must test in-use engines from each engine family identified by ARB. Engines to be tested must have accumulated a minimum of 0.75 (75 percent) of the family's certified useful life period. The number of engines to be tested by a manufacturer will be determined by the following method:

(A) a minimum of four engines per family, provided that no engine exceeds any standard. For each exceedance, two additional engines must be tested until the total number of engines equals ten.

(B) For engine families of less than 500 engines for the identified model year or for engine manufacturers who make less than or equal to 2,000 for that model year, a minimum of two (2) engines per family provided that no engine fails any standard. For each failing engine, two more engines shall be tested until the total number of engines equals ten (10).

(C) If an engine family was certified using carryover emission data and has been previously tested under paragraphs (c)(1) or (c)(2) of this section (and ARB has not ordered a recall for that family), then only one engine for that family must be tested. If that one engine fails any pollutant, testing must be conducted as outlined at (c)(1) or (c)(2) in this section, whichever is appropriate.

(4) At the discretion of the Executive Officer, an engine manufacturer may test more engines than the minima described in paragraph (C) of this section or may concede failure before testing a total of ten engines.

(5) The Executive Officer will consider failure rates, average emission levels and the existence of any defects, among other factors, in determining whether to pursue remedial action under this subpart. The Executive Officer may order a recall pursuant to Article 4.5,

Section 2439 before testing reaches the tenth engine.

(6) The Executive Officer may approve an alternative to manufacturer in-use testing, where:

(a) Engine family production is less than or equal to 200 per year;

(B) Engines cannot be obtained for testing because they are used substantially in vehicles or equipment that are not conducive to engine removal such as large vehicles or equipment from which the engine cannot be removed without dismantling either the engine, vehicle, or equipment; or

(C) Other compelling circumstances associated with the structure of the industry and uniqueness of engine applications. Such alternatives shall be designed to determine whether the engine family is in compliance.

(7) The engine manufacturer shall procure in-use engines which have been operated between 0.75 and 1.0 times the certified engine's useful life period. The engine manufacturer may test engines from more than one model year in a given year. The manufacturer shall begin testing within twelve calendar months after receiving notice that ARB has identified a particular engine family for testing and shall complete testing of such engine family within twelve calendar months from the start of such testing. Test engines may be procured from sources associated with the engine manufacturer (i.e., manufacturer-established fleet engines, etc.) or from sources not associated with the manufacturer (i.e., consumer-owned engines, independently owned fleet engines, etc.).

(b) Maintenance, procurement and testing of in-use engines.

(1) Test engine must have a maintenance and use history representative of in-use conditions.

(a) To comply with this requirement a manufacturer must obtain information from the end users regarding the accumulated usage, maintenance, operating conditions, and storage of the test engines.

(B) Documents used in the procurement process must be maintained as required.

(2) The manufacturer may perform minimal set-to-spec maintenance on components of a test engine that are not subject to parameter adjustment. Maintenance may include only that which is listed in the owner's instructions for engines with the amount of service and age of the acquired test engine. Documentation of all maintenance and adjustments shall be maintained and retained as required.

(3) At least one valid emission test, according to the test procedure outlined in subpart E of this part, is required for each in-use engine.

(4) The Executive Officer may waive portions or requirements of the test procedure, if any, that are not necessary to determine in-use compliance.

(5) If a selected in-use engine fails to comply with any applicable emission standards, the manufacturer shall determine the reason for noncompliance. The manufacturer must report all such reasons of noncompliance within fifteen days of completion of testing. The reports may be filed electronically or mailed to the

following address: Chief of Mobile Source Operations Division, 9528 Telstar Avenue, El Monte, CA 91731.

(c) In-use test program reporting requirements.

(1) The manufacturer shall electronically submit to the Executive Officer within three months of completion of testing all emission testing results generated from the in-use testing program. The following information must be reported for each test engine:

- (a) engine family,
- (B) model,
- (C) engine serial number,
- (D) date of manufacture,
- (E) estimated hours of use,
- (F) date and time of each test attempt,
- (G) results (if any) of each test attempt,
- (H) results of all emission testing,
- (I) summary of all maintenance and adjustments performed,
- (J) summary (if any) of all ARB pre-approved modifications and repairs,
- (K) determinations of noncompliance.

(2) The manufacturer must electronically submit the results of its in-use testing with a pre-approved information heading. The Executive Officer may exempt manufacturers from this requirement upon written request with supporting justification.

(3) All testing reports and requests for approvals made under this subpart shall be sent to the Designated Officer.

(4) The Executive Officer may require modifications to a manufacturer's in-use testing programs.

(d) Voluntary emissions recall.

(1) Prior to an ARB-ordered recall, the manufacturer may perform a voluntary emissions recall pursuant to paragraph (d) of this part. Such manufacturer is subject to the reporting requirements.

(2) Once ARB determines that a substantial number of engines fail to conform with the requirements, the manufacturer will not have the option of a voluntary emissions recall.

(e) In-use emissions credit, averaging, banking, and trading.

(1) General applicability

(A) The in-use credit program for eligible engines is described in this subsection. Participation in this program is voluntary.

(B) An engine family is eligible to participate in the in-use credit program if it is subject to regulation under subpart B of this part with certain exceptions specified in paragraph (c) of this section.

(C) Engines may not participate in the in-use averaging, banking, and trading program if they are delivered to a "point of first retail sale" outside of the California.

(D) Reserved.

(E) An engine family with a compliance level, as determined by in-use testing below, the applicable emission standards to which the engine family is certified may generate emission credits for averaging, banking, or trading in the in-use credit program.

(F) Positive credits generated in a given model year may be used in that model year or in any subsequent model year.

(G) A manufacturer of an engine family with a compliance level exceeding the applicable emission standards to which the engine family is certified, may, prior to the date of the report use previously banked credits, purchase credits from another manufacturer, or perform additional testing to address the associated credit deficit (negative credits or a need for credits).

(H) Reserved.

(I) A manufacturer must notify the Executive Officer of plans to test additional engine families beyond the maximum 25% required for the in-use testing program. Such notice must be submitted to the Executive Officer 30 days prior to initiation of testing. If the additional testing discovers an engine family to be in noncompliance with the applicable emission standards, the testing must be treated as if it were a failure of the normal in-use testing requirement of an engine family.

(J) Manufacturers must demonstrate a zero or positive credit balance under the in-use credit program for a particular model year within 90 days of the end of the in-use testing of that model year's engine families, or at the same time as the final certification averaging, banking and trading (AB&T) report, whichever is later

(2) Engines subject to the 2004 and later model-year emission standards are eligible to participate in the in-use credit program.

(3) The definitions below shall apply to this subsection:

(A) Averaging means the exchange of in-use emission credits among LSI engine families within a given manufacturer's product line.

(B) Banked credits refer to positive emission credits based on applicable actual production or sales volume as contained in the end of model year in-use testing reports submitted to Executive Officer of the ARB. Some or all of these banked credits may be revoked if the Executive Officer review of the end of model year in-use testing reports or any subsequent audit action(s) uncovers problems or errors.

(C) Banking means the retention of in-use emission credits by



the manufacturer generating the emission credits for use in future model year averaging or trading as permitted by these regulations.

(D) Carry-over engine family means an engine family which undergoes certification using carryover test data from previous model years.

(E) In-use credits represent the amount of emission reduction or exceedance, for each regulated pollutant, by an engine family below or above, respectively, the applicable emission standards. Emission reductions below the emission standard are considered "positive credits," while emission exceedances above the emission standard are considered "negative or required credits."

(F) Trading means the exchange of in-use emission credits between manufacturers or brokers.

(G) Compliance level for an engine family is determined by averaging the in-use test results from each engine.

(4) Averaging.

(A) A manufacturer may use averaging across engine families to demonstrate a zero or positive credit balance for a model year. Positive credits to be used in averaging may be obtained from credits generated by another engine family of the same model year, credits banked in previous model years, or credits obtained through trading.

(B) Credits used to demonstrate a zero or positive credit balance must be used at a rate of 1.1 to 1.

(5) Banking.

(A) A manufacturer of an engine family with an in-use compliance level below the applicable emission standards for a given model year may bank positive in-use credits for that model year for in-use averaging and trading.

(B) A manufacturer may consider credits banked 30 days after the submission of the report. During the 30 day period ARB will work with the manufacturer to correct any error in calculating banked credits, if necessary.

(6) Trading.

(A) An engine manufacturer may exchange positive in-use emission credits with other LSI engine manufacturers through trading.

(B) In-use credits for trading can be obtained from credits banked for model years prior to the model year of the engine family requiring in-use credits.

(C) Traded in-use credits can be used for averaging, banking, or further trading transactions.

(D) Unless otherwise approved by the Executive Officer, a manufacturer that generates positive in-use credits must wait 30 days after it has both completed in-use testing for the model year for which the credits were generated and submitted the report before it may transfer credits to another manufacturer or broker.

(E) In the event of a negative credit balance resulting from a transaction, both the buyer and the seller are liable, except in cases involving fraud. Engine families participating in a negative trade may be subject to recall under section 2439 of this article.

(7) Credit Calculation.

(A) For each participating engine family, emission credits (positive or negative) are to be calculated according to the following equation and rounded, in accordance with ASTM E29-93a, to the nearest gram. ASTM E29-93a has been incorporated by reference. Consistent units are to be used throughout the equation. The following equation is used to determine the credit status for an engine family whether generating positive or negative in-use emission credits:

$$\text{Credits (grams)} = \text{SALES} \times (\text{STD} - \text{CL}) \times \text{POWER} \times \text{AF} \times \text{LF} \times \text{UL}$$

Where:

**SALES** = the number of eligible sales tracked to the point of first retail sale in the U.S. for the given engine family during the model year.

**STD** = the emission standard in g/bhp-hr as noted in California Code of Regulations, Title 13, Section 2433.

**CL** = compliance level of the in-use testing in g/bhp-hr as approved by ARB.

**UL** = useful life in hours (5000 hours for engines with displacement of 1.2 liters or greater; 3000 hours for engine with displacement less than 1.2 liters).

**Power** = the average power of an engine family in bhp (sales weighted). The power of each configuration is the rated output in kilowatts as determined by SAE J1228. This procedure has been incorporated by reference.

**LF** = Load factor; Fraction of rated engine power utilized in-use (0.32 for engines with displacement of 1.2 liters or greater; 0.47 for engines with displacement less than 1.2 liters).

**AF** = adjustment factor for the number of tests conducted, as determined from the following table, except that when a manufacturer concedes failure before completion of testing, the adjustment factor shall be 1.0:

Number of Engines Tested	Adjustment Factor
2*, 4	0.5
6	0.75
8	0.9
10	1.0

\*Small volume manufacturer

(B) Any credits used for either averaging, banking, or trading shall be assessed a one-time discount of 10 percent.

(8) Maintenance of records.

(A) Any manufacturer that is participating in the in-use credit program set forth in this subsection shall establish, maintain, and retain the records with respect to its participation in the in-use credit program.

(B) The Executive Officer may void an Executive Order for an engine family for which the manufacturer fails to retain the records required under this section or to provide such information to the Executive Officer or designee upon request.

(9) Reporting requirements.

(A) Any manufacturer who participates in the in-use credit program is required to submit an end of the model year in-use testing report either within 90 days of the end of the model year in-use testing of a given model year's engine families, or at the same time as the final certification AB&T report, whichever is later. The end of the model year in-use testing report must contain the required information and show the calculated credits from all the in-use testing conducted by the manufacturer for a given model year.

(B) Reports shall be submitted to the Executive Officer or designee.

(C) A manufacturer that fails to submit a timely report as required will be considered to not have participated in the in-use credit program.

(D) If the Executive Officer or the manufacturer determines that a reporting error occurred on an end of model year report previously submitted to ARB under this subsection, or an engine family in-use testing report submitted to ARB,

the manufacturer's credits and credit calculations will be recalculated. Erroneous positive credits will be void. Erroneous negative credits may be adjusted by the Executive Officer. An update of previously submitted "point of first retail sale" information is not considered an error and no increase in the number of credits will be allowed unless an error occurred in the calculation of credits due to an error in the "point of first retail sale" information from the time of the original end of model year report.

(10) Notice of Opportunity for Hearing.

Any voiding of an engine family's Executive Order will occur only after the manufacturer concerned has been offered an opportunity for a hearing. The Executive Officer must approve or disapprove the documents required by this Section within 90 days of the date such documents are received from the manufacturer. Any disapproval must be accompanied by a statement of the reasons therefor. In the event of disapproval, the manufacturer may file for an adjudicative hearing under Title 17, California Code of Regulation Subchapter 1.25 to review the decision of the Executive Officer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

## **Section 2439 Procedures for In-Use Engine Ordered Recalls**

(a) The provisions regarding applicability of the ordered recall procedures and the definitions shall be the same as those set forth in Title 13, California Code of Regulations, Sections 2336 and 2338.

(b) **Initiation and Notification of Ordered Emission-Related Recalls.**

(1) A manufacturer shall be notified whenever the Executive Officer has determined, based on production-line test results or in-use test, enforcement testing results, or any other information, that a substantial number of a class or category of equipment or engines produced by that manufacturer, although properly maintained and used, contain a failure in an emission-related component which, if uncorrected, may result in the equipments' or engines' failure to meet applicable standards over their useful lives; or whenever a class or category of equipment or engines within their useful lives, on average, do not conform to the standards prescribed pursuant to Section **43101** of the Health and Safety Code as applicable to the model year of such equipment or engines.

(2) It shall be presumed for purposes of this section that an emission-related failure will result in the exceedance of emission standards unless the manufacturer presents evidence in accordance with the procedures set forth in Title 13, California Code of Regulations, Sections 2336 or 2338 which demonstrates to the satisfaction of the Executive Officer that the failure will not result in exceedance of emission standards over the useful life of the equipment or engine.

(3) The notification shall include a description of each class or category of equipment or engines encompassed by the determination of nonconformity, shall set forth the factual basis for the determination and shall designate a date at least 45 days from the date of receipt of such notification by which the manufacturer shall submit a plan to remedy the nonconformity.

(c) **Availability of Public Hearing.**

(1) The manufacturer may request a public hearing pursuant to the procedures set forth in Subchapter 1.25, Title 17, California Code of Regulations to contest the finding of nonconformity and the necessity for or the scope of any ordered corrective action.

(2) If a manufacturer requests a public hearing pursuant to subsection (1) above, and if the Executive Officer's determination of nonconformity is confirmed at the hearing, the manufacturer shall submit the recall plan required by Section 2439 within 30 days after receipt of the Board's decision.

(d) **Ordered Recall Plan.**

(1) Unless a public hearing is requested by the manufacturer, a recall plan shall be submitted to the Chief, Mobile Source Operations Division, 9528 Telstar Avenue, El Monte, CA 91731, within the time limit specified in the notification. The

Executive Officer may grant the manufacturer an extension upon good cause shown.

(2) The recall plan shall contain the following:

(A) A description of each class or category of equipment or engine to be recalled, including the engine family or sub-group thereof, the model-year, the make, the model, and such other information as may be required to identify the equipment or engines to be recalled.

(B) A description of the nonconformity and the specific modifications, alterations, repairs, corrections, adjustments or other changes to be made to bring the equipment or engines into conformity including a brief summary of the data and technical studies which support the manufacturer's decision regarding the specific corrections to be made.

(C) A description of the method by which the manufacturer will determine the names and addresses of equipment or engine owners and the method by which they will be notified.

(D) A description of the procedure to be followed by equipment or engine owners to obtain correction of the nonconformity including the date on or after which the owner can have the nonconformity remedied, the time reasonably necessary to perform the labor required to correct the nonconformity, and the designation of facilities at which the nonconformity can be remedied. The repair shall be completed within a reasonable time designated by the Executive Officer from the date the owner delivers the equipment or engine for repair. This requirement becomes applicable on the date designated by the manufacturer as the date on or after which the owner can have the nonconformity remedied.

(E) If some or all of the nonconforming equipment or engines are to be remedied by persons other than dealers or authorized warranty agents of the manufacturer, a description of such class of persons and a statement indicating that the participating members of the class will be properly equipped to perform such remedial action.

(F) The capture rate required for each class or category of equipment or engine to be recalled. Under recalls based on exceedance of emission standards, the capture rate shall be at a minimum 80 percent of the equipment or engine within the subject engine family.

(G) The plan may specify the maximum incentives (such as a free tune-up or specified quantity of free fuel), if any, the manufacturer will offer to induce equipment or engine owners to present their equipment for repair, as evidence that the manufacturer has made a good faith effort to repair the percentage of equipment or engines specified in the plan. The plan shall include a schedule for implementing actions to be taken including identified increments of progress towards implementation and deadlines for completing each such increment.

(H) A copy of the letter of notification to be sent to equipment or engine owners.

(I) A description of the system by which the manufacturer will assure that an adequate supply of parts will be available to perform the repair under

the recall plan including the date by which an adequate supply of parts will be available to initiate the repair campaign, and the method to be used to assure the supply remains both adequate and responsive to owner demand.

(J) A copy of all necessary instructions to be sent to those persons who are to perform the repair under the recall plan.

(K) A description of the impact of the proposed changes on fuel economy, driveability, performance and safety of each class or category of equipment or engines to be recalled and a brief summary of the data, technical studies, or engineering evaluations which support these descriptions.

(L) A description of the impact of the proposed changes on the average emissions of the equipment or engines to be recalled based on noncompliance as defined in section 2439, above. The description shall contain the following:

(1) Average noncompliance emission levels.

(2) Average emission reduction or increase per pollutant resulting from the recall repair. These averages shall be verified by the manufacturer by applying the proposed recall repairs to two or more in-use equipment or engines representing the average noncompliance emission levels. Only those equipment or engines with baseline emission levels within 25 percent of the average emission levels of noncomplying pollutant(s) established under the in-use enforcement test program may be used by manufacturers to verify proposed recall repairs. The Executive Officer may allow the use of equipment or engines exceeding these upper averaging noncompliance limits if none which meet the limits can be reasonably procured.

(3) An estimate of the average emission level per pollutant for a class or category of equipment or engines after repair as corrected by the required capture rate. The estimated average emission level shall comply with the applicable emission standards. If the average emissions levels achieved by applying the average emission reduction per equipment or engine after repair and the estimated capture rate, do not achieve compliance with the emissions standards, a manufacturer shall propose other measures to achieve average emissions compliance.

(M) Any other information, reports, or data which the Executive Officer may reasonably determine to be necessary to evaluate the recall plan.

(e) Approval and Implementation of Recall Plan.

(1) If the Executive Officer finds that the recall plan is designed effectively to correct the nonconformity and complies with the provisions of this Section, he or she will so notify the manufacturer in writing. Upon receipt of the approval notice from the Executive Officer, the manufacturer shall commence implementation of the approved plan. Notification of equipment or engine owners and the implementation of recall repairs shall commence within 45 days of the receipt of notice unless the manufacturer can show good cause for the Executive Officer to extend the deadline.

(2) If the Executive Officer does not approve the recall plan or the mitigation measures provided in this Section as submitted, the Executive Officer shall order modification of the plan or mitigation measures with such changes and additions as he or she determines to be necessary. The Executive Officer shall notify the manufacturer in writing of the disapproval and the reasons for the disapproval.

(3) The manufacturer may contest the Executive Officer's disapproval by requesting a public hearing pursuant to the procedures set forth in Subchapter 1.25, Title 17, California Code of Regulations. As a result of the hearing, the Board may affirm, overturn or modify the Executive Officer's action. In its decision, affirming or modifying, the Board shall specify the date by which the manufacturer shall commence notifying equipment or engine owners and implementing the required recall repairs.

(4) If no public hearing is requested in accordance with (3) above, the manufacturer shall incorporate the changes and additions required by the Executive Officer and shall commence notifying equipment or engine owners and implementing the required recall repairs within 60 days of the manufacturer's receipt of the Executive Officer's disapproval.

(f) Notification of Owners.

(1) Notification to equipment or engine owners shall be made by first class mail or by such other means as approved by the Executive Officer provided, that for good cause, the Executive Officer may require the use of certified mail to ensure an effective notification.

(2) The manufacturer shall use all reasonable means necessary to locate equipment or engine owners provided, that for good cause, the Executive Officer may require the manufacturer to use motor equipment registration lists available from State or commercial sources to obtain the names and addresses of equipment or engine owners to ensure effective notification.

(3) The Executive Officer may require subsequent notification by the manufacturer to equipment or engine owners by first class mail or other reasonable means provided, that for good cause, the Executive Officer may require the use of certified mail to ensure effective notification.

(4) The notification of equipment or engine owners shall contain the following:

(A) The statement: "the California Air Resources Board has determined that your (equipment or engine) (is or may be) releasing air pollutants which exceed (California or California and Federal) standards. These standards were established to protect your health and welfare from the dangers of air pollution."

(B) A statement that the nonconformity of any such equipment or engines will be remedied at the expense of the manufacturer.

(C) A statement that eligibility may not be denied solely on the basis that the equipment or engine owner used parts not manufactured by the original equipment manufacturer, or had repairs performed by outlets other than the equipment or engine manufacturer's franchised dealers.



(D) A clear description of the components which will be affected by the recall action and a general statement of the measures to be taken to correct the nonconformity.

(E) Reserved

(F) A description of the adverse effects, if any, that an uncorrected nonconformity would have on the performance, fuel economy, or driveability of the equipment or engine or to the function of other engine components.

(G) A description of the procedure which the equipment or engine owner should follow to obtain correction of the nonconformity including the date on or after which the owner can have the nonconformity remedied, the time reasonably necessary to correct the nonconformity, and a designation of the facilities located in California at which the nonconformity can be remedied.

(H) After the effective date of the recall enforcement program referred to above, a statement that a certificate showing that the equipment has been repaired under the recall program shall be issued by the service facilities and that such a certificate may be required as a condition of equipment registration or operation, as applicable.

(I) A card to be used by a equipment or engine owner in the event the equipment or engine to be recalled has been sold. Such card should be addressed to the manufacturer, have postage paid, and shall provide a space in which the owner may indicate the name and address of the person to whom the equipment or engine was sold.

(J) The statement: "In order to ensure your full protection under the emission warranty made applicable to your (equipment or engine) by State or Federal law, and your right to participate in future recalls, it is recommended that you have your (equipment or engine) serviced as soon as possible. Failure to do so could be determined to be a lack of proper maintenance of your (equipment or engine)".

(K) A telephone number provided by the manufacturer, which may be used to report difficulty in obtaining recall repairs.

(L) The manufacturer shall not condition eligibility for repair on the proper maintenance or use of the equipment except for strong or compelling reasons and with approval of the Executive Officer; however, the manufacturer shall not be obligated to repair a component which has been removed or altered so that the recall action cannot be performed without additional cost.

(M) No notice sent pursuant to this section above, nor any other communication sent to equipment or engine owners or dealers shall contain any statement, express or implied, that the nonconformity does not exist or will not degrade air quality.

(N) The manufacturer shall be informed of any other requirements pertaining to the notification under this section which the Executive Officer has determined are reasonable and necessary to ensure the effectiveness of the recall campaign.

(g) Repair Label.

(1) The manufacturer shall require those who perform the repair under the recall plan to affix a label to each equipment or engine repaired or, when required, inspected under the recall plan.

(2) The label shall be placed in a location as approved by the Executive Officer and shall be fabricated of a material suitable for such location and which is not readily removable.

(3) The label shall contain the recall campaign number and a code designating the facility at which the repair, inspection for repair, was performed.

(h) Proof of Correction Certificate.

The manufacturer shall require those who perform the recall repair to provide the owner of each equipment or engine repaired with a certificate, through a protocol and in a format prescribed by the Executive Officer, which indicates that the noncomplying equipment or engine has been corrected under the recall program. This requirement shall become effective and applicable upon the effective date of the recall enforcement program referred to in this section, above.

(i) Capture Rates and Alternative Measures.

The manufacturer shall comply with the capture rate specified in the recall plan as determined pursuant to this Section, above, within six consecutive quarters beginning with the quarter in which the notification of equipment or engine owners was initiated. If, after good faith efforts, the manufacturer cannot correct the percentage of equipment specified in the plan by the applicable deadlines and cannot take other measures to bring the engine family into compliance with the standards, the manufacturer shall propose mitigation measures to offset the emissions of the unrepaired equipment within 45 days from the last report filed pursuant to Section 2439(k), below. The Executive Officer shall approve such measures provided that:

(1) The emission reductions from the recalled and repaired equipment or engines and the mitigation measures are equivalent to achieving the capture rate; and

(2) The emission reductions from the mitigation measures are real and verifiable; and

(3) The mitigation measures are implemented in a timely manner.

(j) Preliminary Tests.

The Executive Officer may require the manufacturer to conduct tests on components and equipment or engines incorporating a proposed correction, repair, or modification reasonably designed and necessary to demonstrate the effectiveness of the correction, repair, or modification.

(k) Communication with Repair Personnel.

The manufacturer shall provide to the Executive Officer a copy of all communications which relate to the recall plan directed to dealers and other persons

who are to perform the repair. Such copies shall be mailed to the Executive Officer contemporaneously with their transmission to dealers and other persons who are to perform the repair under the recall plan.

(l) Recordkeeping and Reporting Requirements.

(1) The manufacturer shall maintain sufficient records to enable the Executive Officer to conduct an analysis of the adequacy of the recall campaign. The records shall include, for each class or category of equipment or engine, but need not be limited to, the following:

(A) Engine family involved and recall campaign number as designated by the manufacturer.

(B) Date owner notification was begun, and date completed.

(C) Number of equipment or engines involved in the recall campaign.

(D) Number of equipment or engines known or estimated to be affected by the nonconformity.

(E) Number of equipment or engines inspected pursuant to the recall plan and found to be affected by the nonconformity.

(F) Number of inspected equipment or engines.

(G) Number of equipment or engines receiving repair under the recall plan.

(H) Number of equipment or engines determined to be unavailable for inspection or repair under the recall plan due to exportation, theft, scrapping, or for other reasons (specify).

(I) Number of equipment or engines determined to be ineligible for recall action due to removed or altered components.

(J) A listing of the identification numbers of equipment or engines subject to recall but for whose repair the manufacturer has not been invoiced. This listing shall be supplied in a standardized computer data storage device to be specified by the Executive Officer. The frequency of this submittal, as specified in subsection (c) below, may be changed by the Executive Officer depending on the needs of recall enforcement.

(K) Any service bulletins transmitted to dealers which relate to the nonconformity and which have not previously been submitted.

(L) All communications transmitted to equipment or engine owners which relate to the nonconformity and which have not previously been submitted.

(2) If the manufacturer determines that the original responses to subsections (1)(C) and (D) of these procedures are incorrect, revised figures and an explanatory note shall be submitted. Responses to subsections (1)(E), (F), (G), (H), and (I) shall be cumulative totals.

(3) Unless otherwise directed by the Executive Officer, the information specified in subsection (1) of these procedures shall be included in six

quarterly reports, beginning with the quarter in which the notification of owners was initiated, or until all nonconforming equipment or engines involved in the campaign have been remedied, whichever occurs sooner. Such reports shall be submitted no later than 25 days after the close of each calendar quarter.

(4) The manufacturer shall maintain in a form suitable for inspection, such as computer information storage devices or card files, and shall make available to the Executive Officer or his or her authorized representative upon request, lists of the names and addresses of equipment or engine owners:

- (A) To whom notification was given;
- (B) Who received remedial repair or inspection under the recall plan; and
- (C) Who were denied eligibility for repair due to removed or altered components.

(5) The records and reports required by these procedures shall be retained for not less than one year beyond the useful life of the equipment or engines involved, or one year beyond the reporting time frame specified in subsection (3) above, whichever is later.

(m) Penalties.

Failure by a manufacturer to carry out all recall actions ordered by the Executive Officer pursuant to Sections 2439(b) through (c) of these procedures is a violation of Health and Safety Code Section **43105** and shall subject the manufacturer, on a per engine basis, to any and all remedies available under Part 5, Division 26 of the Health and Safety Code.

(n) Extension of Time.

The Executive Officer may extend any deadline in the plan if he or she finds in writing that a manufacturer has shown good cause for such extension.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code.

Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

State of California  
AIR RESOURCES BOARD

**PROPOSED**

AMENDMENTS TO TITLE 13, CALIFORNIA CODE OF REGULATIONS,  
CHAPTER 9, ARTICLE 3  
CALIFORNIA REGULATIONS FOR NEW 1995 AND LATER OFF-HIGHWAY  
RECREATIONAL VEHICLES AND ENGINES

Adopted: March 20, 1992  
Amended: April 8, 1993  
Amended: May 26, 1995  
Amended:

NOTE: This Document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underline. All deletions to languages are indicated by ~~strikeout~~. Text appearing within { } are amendments adopted by the Board at the March 26, 1998 hearing that are not yet effective. In the event these Board-adopted amendments are not approved by the Office of Administrative Law (OAL) before the effective date of this regulation, the text appearing within { } will not appear in this regulation.

## **Proposed Regulation Order**

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Amend Title 13, California Code of Regulations, Chapter 9 Off-Road Vehicle and Engines Pollution Control Devices, sections 2411 through 2414 to read as follows:

### **Article 2. Off-Highway Recreational Vehicles and Engines**

#### **§ 2410. Applicability.**

(a)(1) This article shall be applicable to ~~{new specialty vehicle engines under 25 horsepower (hp) produced on or after January 1, 1995 and all other}~~ new off-highway recreational vehicles and engines manufactured for use in such vehicles produced on or after January 1, 1997, for sale, lease, use, and introduction into commerce in California.

(2) New off-highway recreational vehicles and engines used in such vehicles, subject to any of the standards set forth in Article 3, shall be certified for use and sale by the Air Resources Board and covered by an Executive Order, pursuant to Section 2412 of this Article.

(b) Each part of this article shall be deemed severable, and in the event that any part of this chapter or article is held to be invalid, the remainder of this article shall continue in full force and effect.

(c) This article includes provisions for certification, labeling requirements, emission standard enforcement, and recall.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104, 43105, 43107, and 43205.5 Health and Safety Code.

Reference: Sections 43013, 43018, 43101, 43104, 43105, 43107, and 43205.5 Health and Safety Code.

**§ 2411. Definitions.**

(a) The definitions in Section 1900 (b), Chapter 3, Title 13 of the California Code of Regulations, shall apply with the following additions:

(1) “All-Terrain Vehicle” means any motorized off-highway vehicle 50 inches (1270 mm) or less in overall width, with an unladen dry weight of 600 pounds (275 kg) or less, designed to travel on four low pressure tires, having a seat designed to be straddled by the operator and handlebars for steering control, and intended for use by a single operator and no passengers. The vehicle is designed to carry not more than 350 pounds (160 kg) payload, excluding the operator, and is powered by an internal combustion engine. Width and unladen weight shall be exclusive of accessories and optional equipment. A go-kart, golf cart or specialty vehicle is not, for purposes of this regulation, to be classified as an all-terrain vehicle. An all-terrain vehicle that is not used exclusively in competition/racing events in a closed course is not a competition/racing vehicle for purposes of these regulations.

(2) “ARB Enforcement Officer” means any employee of the Air Resources Board so designated in writing by the Executive Officer of the Air Resources Board or by the Executive Officer’s designee.

(3) “Assembly-Line Tests” are those tests or inspections which are performed on or at the end of the assembly-line.

(4) “Competition/Racing Vehicle” means those vehicles that are operated exclusively off of the highways on closed courses in organized racing/competition events conducted under the auspices of a recognized sanctioned body or by permit issued by the local governmental authority having jurisdiction.

(5) “Confirmatory testing” means an ARB directed follow-up emissions test and inspection of the test engine or test vehicle that had been used by the manufacturer to obtain test data for submittal with the certification application. The emissions tests can be conducted at ARBOR contracted out facilities or at the manufacturer’s facility.

(6) “Crankcase Emissions” means airborne substances emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication system.

(7) “Emission Control System” includes any component, group of components, or engine modification which controls or causes the reduction of substances emitted from an engine.

(8) “End of Assembly-Line” is defined as that place where the final

inspection test or quality-audit test is performed by the manufacturer.

(9) “Exhaust Emissions” means substances emitted into the atmosphere from any opening downstream from the exhaust port of an engine.

(10) “Final Calendar Quarter Production” is defined as the calendar quarter in which the production of an engine family ends.

(11) “Fuel System” means the combination of any of the following components: fuel tank, fuel pump, fuel lines, oil injection metering system, carburetor or fuel injection components, evaporative controls and all fuel system vents.

(12) “Go-Kart” means any four wheeled, open framed vehicle equipped with an internal combustion engine. These vehicles are generally found at amusement parks and rented to patrons on a “pay-by-play” basis. These vehicles are generally designed for a single rider and run on a confined track. A go-kart that is not used exclusively in competition/racing events in a closed course is not a competition/racing vehicle for purposes of these regulations.

(13) “Golf Cart” means a vehicle used to convey equipment and no more than two persons, including the driver, to play the game of golf in an area designated as a golf course. Golf carts are designed to have an unladen weight of less than 1,300 pounds and carry not more than 100 pounds, excluding passengers, accessories and optional equipment. A golf cart is not used for grounds keeping or maintenance purposes.

(14) “Manufacturer” means the engine or vehicle manufacturer that applies to have the vehicle or engine certified.

(15) “Off-Highway Recreational Vehicle Engines” or “Engines” are identified as: two-stroke or four-stroke, air-cooled, liquid-cooled, gasoline, diesel, alternate fuel powered engines or electric motors that are designed for powering off-road recreational vehicles and engines included in, but not limited to use in, the following: off-road motorcycles, all-terrain equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air Act, as amended, and as defined by regulation of the Environmental Protection Agency, are specifically not included within this category.

(16) “Off-Road Vehicle” means any non-stationary device, powered by an internal combustion engine or electric motor, used primarily off the highways, to propel, move, or draw persons or property including any device propelled, moved, or drawn exclusively by human power, and used in, but not limited to the following applications: Marine Vessels, Construction/Farm Equipment, Locomotives, Utility Engines and Lawn and Garden Equipment, Off-Road Motorcycles, and Off-Highway Vehicles.



(17) “Off-Road Motorcycle” means any two or three wheeled vehicle equipped with an internal combustion engine and weighing less than 1,499 pounds. An off-road motorcycle is primarily designed for use off highways. These vehicles are mainly used for recreational riding on dirt trails but are not limited to this purpose. An off-road motorcycle that is not used exclusively in competition/racing events in a closed course is not a competition/racing vehicle for purposes of these regulations.

(18) “Scheduled Maintenance” means any adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems required by the manufacturer which is performed on a periodic basis to prevent part failure or equipment or engine malfunction, or anticipated as necessary to correct an overt indication of malfunction or failure for which periodic maintenance is not appropriate.

~~(19) “Specialty Vehicles” means any vehicle powered by an internal combustion engine having not less than 3 wheels in contact with the ground, having an unladen weight generally less than 2,000 pounds, which is typically operated between 10 and 35 miles per hour. The recommended bed payload for specialty vehicles is usually up to 2,000 pounds. Specialty vehicles are mainly used off of highways and residential streets. Applications of such vehicles include, but are not limited to, carrying passengers, hauling light loads, grounds keeping and maintenance, resort or hotel areas, airports, etc.~~

~~(20)~~(19) “Ultimate Purchaser” means the first person who in good faith purchases or leases a new engine or equipment for purposes other than resale.

~~(21)~~(20) “Unscheduled Maintenance” means any inspection, adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems which is performed to correct or diagnose a part failure which was not anticipated.

~~(22)~~(21) “Vehicle Identification Number (VIN)” means an alphanumeric code which has been permanently assigned by the manufacturer to a vehicle. The VIN is unique to each vehicle and may contain information deemed necessary by governing agencies. Unless otherwise noted, the VIN will follow format specified in the Code of Federal Regulations 49, Chapter V, Parts 565-566, and 571, section 571.115 - Vehicle Identification Number - Content Requirements, which are incorporated herein by reference.

~~(23)~~(22) “Zero Emission Vehicle” means any vehicle which procedures zero exhaust emissions of any criteria pollutant under any and all possible operational modes.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, and 43107, Health and Safety Code.

Reference: Sections 43013, 43018, 43101, and 43107, Health and Safety Code.

**§ 2412. Emission Standards and Test Procedures - New Off-Highway Recreational Vehicles and Engines.**

(a) This section shall be applicable to ~~{specialty vehicle engines under 25 horsepower produced on or after January 1, 1995, and all other}~~ off-highway recreational vehicles and engines used in such vehicles produced on or after January 1, 1997.

(b) For purposes of certification in California, manufacturers shall comply with the following exhaust emissions from new off-highway recreational vehicles and engines that are sold, leased, used, or introduced into commerce in California. Exhaust emissions shall not exceed:

**Proposed Emission Standards**

<i>Vehicle &amp; Model Year</i>	<i>Hydro- carbon</i>	<i>Oxides of Nitrogen</i>	<i>Carbon Monoxide</i>	<i>Particulate Matter<sup>1</sup></i>
Off-Road Motorcycles and All-Terrain Vehicles with Engines Greater Than 90 cc <sup>3</sup> 1997 and Later (g/km) <sup>4</sup>	1.2 <sup>2</sup>	-	15.0	-
Off-Road motorcycles and All Terrain Vehicles with Engines 90 cc or Less 1999 and Later (g/km)	1.2 <sup>2</sup>	-	15.0	-
All-Terrain Vehicle Option 1997 and Later	Shall comply with exhaust emission standards equivalent to the off-road motorcycle and all-terrain vehicle standard using the utility test procedures set forth in CCR, Title 13, section 2403, and the incorporated document "California Exhaust Emission Standards and Test Procedures for 1995 and Later Utility and Lawn and Garden Equipment Engines" which is hereby incorporated by reference herein. <sup>5</sup>			
Golf Carts in Federal Ozone Non-Attainment Areas 1997 and Later	ZERO	ZERO	ZERO	ZERO

{Specialty Vehicle Engines <25 }  
 {horsepower}

{ 1995-1998 ————— 10.0/12.0<sup>6</sup> Combined ————— 300 ————— 0.9}

{—1999 and Later  
 (g/Bhp-hr)<sup>7</sup> ————— 3.2 Combined ————— 100 ————— 0.25}

~~Go-Karts and Specialty  
 Vehicle Engines~~

~~≥ 25 horsepower ————— 3.2 Combined ————— 100 ————— 0.25  
 1997 and later (g/Bhp-hr)~~

- 
1. Applicable to diesel and two-stroke spark ignited engines only.
  2. Compliance with the 1.2 gram per kilometer HC standard to be applied as a “corporate average” shall be determined as provided in subsection (d). Each engine family shall have only one applicable standard.
  3. Cubic centimeter.
  4. Grams per kilometer.
  5. Compliance with the equivalent all-terrain vehicle HC standard to be applied as a “corporate average” shall be determined as provided in subsection (d). Each engine family shall have only one applicable standard.
  6. The standard is applicable based on the engine displacement. Engines <225 cubic centimeters (cc) shall comply with 12.0 g/Bhp-hr HC+NO<sub>x</sub> standard and engines 225 cc and greater shall comply with the 10.0 g/Bhp-hr HC+NO<sub>x</sub> standard.
  7. Grams per brake-horsepower-hour.
  8. Although golf cart manufacturers must file an application of certification and comply with the administrative requirements outlined in the procedures to certify their vehicles for sale in California, they are not required to perform emissions testing.

(c)(1) The test procedures for determining certification and compliance with the standards for exhaust emissions from new off-road motorcycles, all-terrain vehicles, and golf carts are set forth in “California Exhaust Emission Standards and Test Procedures for 1995 and Later Off-Highway Recreational Vehicles and Engines,” which incorporates by reference Subparts E and F, Title 40, Code of Federal Regulations, adopted. There are no emissions test procedures for golf carts.<sup>8</sup>

(2) The test procedures for determining certification and compliance with the

standards for exhaust emissions from new specialty vehicles and go-karts, and engines used in such vehicles, and all-terrain vehicle engines (those engines utilizing the optional standards noted in (b) above) are set forth in “California Exhaust Emission Standards and Test Procedures for 1995 and Later Lawn and Garden and Utility Equipment Engines,” adopted March 20, 1992, and last amended April 8, 1993.

(d) Compliance with a standard to be applied as a “corporate average” shall be determined as follows:

$$\frac{\sum_{j=1}^n (PROD)_{jx} (STD)_{jx}}{\sum_{j=1}^n (PROD)_{jx}} = STD_{ca}$$

n = Off-road motorcycle and all-terrain vehicle engine families.

$PROD_{jx}$  = Number of units in engine family j produced for sale in California in model year x

$STD_{jx}$  = The manufacturer designated HC exhaust emission standard for engine family j in model year x, which shall be determined by the manufacturer subject to the following conditions: (1) no individual engine family exhaust emission standard shall exceed 2.5 g/km, and (2) no engine family designation or engine family exhaust emission standard shall be amended in a model year after the engine family is certified for the model year, and (3) prior to sale or offering for sale in California, each engine family shall be certified in accordance with “California Exhaust Emissions Standards and Test Procedures for 1995 and Later Off-highway Recreational Vehicle and Engine” adopted, and shall be required to meet the manufacturer’s designated HC exhaust emission standard as a condition of the certification Executive Order. Prior to certification the manufacturer shall also submit estimated production volumes for each engine family to be offered for sale in California.

$STD_{ca}$  = A manufacturer’s corporate average HC exhaust emissions from those California off-road motorcycles and all-terrain vehicles subject to the California corporate average HC exhaust emissions standard, as established by an Executive Order certifying the California production for the model year. This order must be obtained prior to the issuance of certification Executive Orders for individual engine families for the model year and shall include but not be limited to the following requirements:

(1) During the manufacturer's production year, for each vehicle produced for sale in California, the manufacturer shall provide the following information to the Executive Officer within 30 days after the last day in each calendar quarter:

(j) vehicle identification numbers and an explanation of the identification code if applicable;

(ii) model number and engine size of vehicle;

(iii) the total number of vehicles marketed and produced as non-competition vehicles for sale in California and their applicable designated emissions standards.

(2) The manufacturer's average HC exhaust emissions shall meet the corporate average standard at the end of the manufacturer's production for the model year.

(3) Production and sale of vehicles which result in non-compliance with the California standard for the model year shall cause a manufacturer to be subject to civil penalties, according to applicable provisions of the Health and Safety Code. All excess emissions resulting from non-compliance with the California standard shall be made up in the following model year.

(4) For a period of up to one year following the end of the model year, the manufacturer shall submit California sales and registration data as it becomes available, for each model.

(e) As an option to the standards set forth in section (b) above, exhaust emissions from 1997 and later all-terrain vehicle engines shall not exceed the equivalent to the off-road motorcycle and all-terrain vehicle standard using the utility test procedures set forth in "California Exhaust Emission Standards and Test Procedures for 1995 and Later Utility and Lawn and Garden Equipment Engines", adopted, March 20, 1992, and last amended April 8, 1993, which is hereby incorporated by reference herein.

(f)(1) On or after January 1, 1995, no new engines shall be produced for sale to replace specialty vehicle engines, unless the engines comply with the emission standards in effect at the time of replacement.

(2) On or after January 1, 1997, no new engines greater than 90 cc shall be produced for sale to replace off-road motorcycles, all-terrain vehicles, go-karts and engines used in such vehicles, unless those engines comply with the emission control standards in effect at the time of replacement.

(3) On or after January 1, 1997, manufacturers shall not produce for sale in federal ozone non-attainment areas of California new, non-zero emission engines for golf carts.

(4) On or after January 1, 1999, no new engines 90 cc or less shall be produced for sale to replace off-road motorcycle and all-terrain vehicle engines, unless those engines comply with the emission control standards in effect at the time of replacement.

(g) The Executive Officer may find that any off-road motorcycles, all-terrain vehicles, specialty vehicles, go-karts or engines used in such vehicles certified to comply with California emission standards and test procedures for on-road or other off-road applications are in compliance with these regulations.

(h) No crankcase emissions shall be discharged into the ambient atmosphere from 1997 and later off-road motorcycles, all-terrain vehicles, golf carts, or engines used in such vehicles.

NOTE: Authority cited: Sections 39600, 39601, 431013, 43018, and 43107, Health and Safety Code.

Reference: Sections 43013, 43018, and 43107, Health and Safety Code.

**§ 2413. Emission Control Labels - New Off-Highway Recreational Vehicles.**

(a) All off-road motorcycles, all-terrain vehicles, and engines used in such vehicles produced on or after January 1, 1997, for sale, lease, use or introduction into commerce in California, shall comply with the labeling requirements of Title 13, CCR, Chapter 1, Article 2, Section 1965, and the incorporated “California Motor Vehicle Emission Control Label Specifications,” adopted March 1, 1978, as last amended July 12, 1991, and are hereby incorporated by reference herein. Any reference to motorcycles in the incorporated documents shall be applicable to off-road motorcycles, all-terrain vehicles, and engines used in such vehicles.

(b) ~~{Specialty vehicles equipped with engines less than 25 horsepower and engines used in such vehicles produced on or after January 1, 1995}, and specialty vehicles and go-karts equipped with engines 25 horsepower and greater and engines used in such vehicles produced on or after January 1, 1997, shall comply with the labeling requirements of Title 13, CCR, Chapter 9, Article 2, Section 2404 “Emission Control Labels - 1995 and Later Utility and Lawn and Garden Equipment Engines,” incorporated by reference herein. Any reference to utility and lawn and garden equipment in the incorporated documents shall be applicable to specialty vehicles, go-karts, and engines used in such vehicles.~~

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, and 43107, Health and Safety Code.

Reference: Sections 43013, 43018, and 43107, Health and Safety Code.



**§ 2414. New Off-Highway Recreational Vehicle Engine Emission Standards, Enforcement and Recall Provisions, Warranty, Quality Audit, and New Engine Testing.**

(a) This section applies to off-road motorcycles, all-terrain vehicles, and engines used in such vehicles produced on or after January 1, 1997, for sale, lease, use or introduction into commerce in California. Off-road motorcycles, all-terrain vehicles, and engines used in such vehicles are subject to Title 13, California Code of Regulations, Chapter 2, Articles 2.1 through 2.3, and the incorporated Appendix A, "California In-Use Vehicle Emission-Related Recall Procedures, Enforcement Test Procedures, and Failure Reporting Procedures for 1982 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles and Engines, and Motorcycles," which are incorporated by reference herein.

(b) ~~{This section applies to specialty vehicles less than 25 horsepower produced on or after January 1, 1995}, and specialty vehicles and go-karts 25 hp and over produced on or after January 1, 1997, for sale, lease, use or introduction into commerce in California. Specialty vehicles, go-karts 25 horsepower and over, and engines used in such vehicles are subject to defects warranty, new engine compliance testing, and quality audit testing, as stipulated in Title 13, California Code of Regulations, Chapter 9, Sections 2405, 2406, and 2407, which are incorporated by reference herein.~~

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43105, 43107, 43205.5, and 43210, Health and Safety Code.

Reference: Sections 43013, 43018, 43105, 43107, 43205.5, and 43210, Health and Safety Code.